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# Managing Water Abstraction

The Catchment Abstraction Management Strategy process

Updated July 2002



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# Foreword

Water is the most essential of our natural resources, so we need to manage and use it effectively. We have to ensure that we have enough to meet our very diverse needs as a society whilst also minimising the impact of its use both on the environment and on future generations. Catchment Abstraction Management Strategies (CAMS) represent a step-change in the way that we manage this vital resource. They provide new opportunities for partnership to ensure that decisions are taken with as full an understanding as possible of local issues.

We have consulted on our proposals for how the CAMS process should work and we have taken account of the many responses we received. In the following pages we set out how the process will operate and your opportunities for involvement. The success of CAMS depends on the commitment and involvement of all those who have an interest in the way our water resources are managed. I encourage you to participate so that our vision for CAMS – a shared strategy for the sustainable management of water resources within a catchment – can be realised.



Sir John Harman Chairman April 2001

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# Introduction

Abstraction is the removal of water, permanently or temporarily, from inland waters including rivers, canals, reservoirs or from underground strata. The present licensing system for control of water abstraction in England and Wales was introduced by the Water Resources Act 1963. This system is administered by the Environment Agency, which has to take account of its duties and powers in considering whether to grant new abstraction licences and in amending or administering existing licences. In addition to specific water resources powers and duties, there are also other requirements on the Environment Agency in licensing abstraction. These include taking account of costs and benefits, contributing to sustainable development and considering the needs of rural areas.

In March 1999, the Government published *Taking Water Responsibly*<sup>1</sup>, outlining its decisions, following consultation<sup>2</sup>, on changes to the abstraction licensing system. Many of the changes require new legislation, but others are achievable within our present powers. Foremost among these was the proposal for the development of Catchment Abstraction Management Strategies (CAMS). CAMS make more information on water resources allocation publicly available and allow the balance between the needs of abstractors and those of the aquatic environment to be determined in consultation with the local community and interested parties.

Another key decision in *Taking Water Responsibly* was that licences should be time-limited. As a result, all new and varied licences will be issued with a time limit. CAMS is the vehicle for reviewing time-limited licences, determining whether they should be renewed and, if so, on what terms.

Following the publication of *Taking Water Responsibly*, the Agency developed its detailed proposals for the production of CAMS and the management of time-limited licences. These proposals were published in our consultation document, *Managing Water Abstraction: Towards A Shared Strategy*, in April 2000. This was followed, in January 2001, by our consultation response document<sup>3</sup> that summarised

the responses received and provided feedback from the Agency on the issues raised. The details of the process were then finalised, taking into account the views and suggestions expressed by respondents to the consultation.

This document, *Managing Water Abstraction: The Catchment Abstraction Management Strategy Process*, is the national document that supports the development of CAMS at a local level. It sets out the national policy and regulatory framework within which CAMS operate, it describes the process of developing a CAMS and it provides information on the structure and content of CAMS documents. Local CAMS documents should be read in conjunction with this document.

In chapter 2, the main concepts of the CAMS process – resource assessment, resource availability status and sustainability appraisal – are introduced. It also provides the context for CAMS by giving an overview of the legislative framework and the interactions between CAMS and other initiatives. More detail on these interactions and the system of abstraction licensing is provided in Annexes 1 and 2 respectively. Chapter 3 describes the process of developing a CAMS. It explains the stages of the process by focussing on the key elements – resource assessment, sustainability appraisal, consultation, the documents produced, and implementation and evaluation. Finally, as there are objectives for CAMS specifically relating to licence trading and time-limiting of licences, chapters 4 and 5 focus on these areas.

CAMS will operate on a six-year review cycle. This document supports the process for the first cycle. This second version contains minor amendments to improve the clarity of some chapters. If the proposals for new legislation are approved by Parliament before the end of the first cycle of CAMS, a more substantial revision of this document will be required. Implementation of the European Water Framework Directive will also necessitate a re-evaluation of the document.

1 *Taking Water Responsibly: Government decisions following consultations on changes to the water abstraction licensing systems in England and Wales*. DETR and Welsh Office (1999)

2 *The Review of the Water Abstraction Licensing System in England and Wales – Consultation Paper*. DETR and Welsh Office (1998)

3 *Managing Water Abstraction: Towards A Shared Strategy – Consultation Response*. Environment Agency (2001)

Although CAMS are a new initiative, developed to make information on water resources availability and licensing more publicly available and to provide a more open, consistent and structured approach to water resources management, many elements of the process described in this document are not new. For example, resource assessment has been undertaken on an ongoing basis to provide information on the availability of water within catchments. CAMS use a four-fold classification to present this information more comprehensibly. CAMS introduce sustainability appraisal, which has not been undertaken for licensing policies or strategies before. However, the costs and benefits of individual licence proposals have been, and continue to be, considered as part of the determination process. The cyclical review of CAMS and the associated management of time-limited licences make the process more flexible in the light of uncertainties such as climate change. It also contributes to the achievement of a sustainable balance between the water needs of abstractors and of the environment. CAMS are simply a more sophisticated management tool, re-packaging the way water resources have been managed previously.

The Agency's "Environmental Vision" looks forward to a more sustainable future. Understanding our demands on the environment, managing and minimising them will all contribute to the Vision. The CAMS process has a key role to play in achieving wiser, sustainable use of our water resources.

# Catchment Abstraction Management Strategies (CAMS)

## 2.1. Principles of CAMS

The objectives for CAMS are:

- to make information publicly available on water resources availability and licensing within a catchment;
- to provide a consistent and structured approach to local water resources management, recognising both abstractors' reasonable needs for water and environmental needs;
- to provide the opportunity for greater public involvement in the process of managing abstraction at a catchment level;
- to provide a framework for managing time-limited licences;
- to facilitate licence trading.

The Agency's principal aim is to contribute to sustainable development. To manage water resources effectively we must take a holistic approach, considering the needs of abstractors alongside those of fisheries, recreation and navigation, as well as the need to protect water quality and conserve the aquatic environment.

Among our duties when considering an application for a licence (or any variation to an existing licence) is the need to ensure that we do not cause river flows, groundwater levels or water levels in wetlands to fall artificially below the minimum level required for the conservation of the aquatic environment and for meeting the needs of existing protected rights and lawful uses. CAMS allow these "in-river needs" and the needs of abstractors to be balanced in a more open way. They set out a strategy for achieving the sustainable management of water resources within a catchment or group of catchments, including arrangements for managing the renewal of time-limited licences. With a national programme for implementation and a six-year review cycle, CAMS provide a more consistent and responsive approach to the management of water resources.

By providing an indication of the availability of water resources within river catchments, CAMS highlight any areas where future resource development may take place. They also identify any areas where current levels of licensed abstraction exceed the resources available. Where this is the case, CAMS allow the issue of how to regain a sustainable level of abstraction to be discussed and to identify mechanisms for this to be achieved.

Public consultation is an integral part of the CAMS process. There is a pre-consultation period involving key stakeholders during the early stages of CAMS development. This ensures that all issues and water needs are identified and raises awareness of the formal consultation exercise. Once the resource assessment is complete, a consultation document forms the basis for a period of formal consultation. In units where water resources are available, the consultation document proposes a strategy for dealing with applications for new licences and variations, and for managing existing abstraction licences. Where current levels of abstraction exceed the total resource, options for resource recovery are proposed, along with a strategy for managing existing licences. After this period of consultation, the strategy is finalised, taking into account the views of respondents, and the Catchment Abstraction Management Strategy is produced and published.

## 2.2. The legislative and wider framework

The system of abstraction licensing was introduced by the Water Resources Act 1963. Since then, some details have been amended and the whole has been consolidated into more recent legislation (Water Resources Act 1991, Environment Act 1995), but the principles remain fundamentally unchanged.

European legislation with implications for the management of water resources (Birds and Habitats Directives) has also been implemented into UK

legislation. These Directives require the Agency to undertake activities to protect designated sites. CAMS must ensure that the water requirements of these sites are met. The European Water Framework Directive, 2000, establishes a common framework for the protection and management of surface water and groundwater by providing an integrated and consistent approach. It has significant implications for the Agency's management of water resources. CAMS will play a key role in providing the information required to formulate River Basin Management Plans, required by the Directive.

The legislation dictates the process that we must follow and the factors that we must consider in determining an individual licence application. The CAMS initiative now provides a consistent and structured strategy framework within which the existing resource assessment and licence determination processes fit. It makes the system of abstraction licensing more open by providing information on water resources availability and management, and allows stakeholders to contribute to the development of the strategies.

The development of CAMS has links with many other initiatives, both within the Agency and by other organisations. These include water resources strategies, the Restoring Sustainable Abstraction programme, water company planning initiatives, and plans relating to specific interests (Fisheries Action Plans, Catchment Flood Management Plans, Biodiversity Action Plans). More detail on the interactions between CAMS and other initiatives is provided in Annexe 1.

## 2.3. Definition of CAMS areas

*Taking Water Responsibly* stated that CAMS should complement, but be physically separate from, the Local Environment Agency Plans (LEAPs). These were plans, developed in consultation with local stakeholders, that identified environmental issues across all of the Agency's activities and set out actions for their resolution. More detail is given on LEAPs in Annexe 1. CAMS areas have been defined in such a way as to be comparable in size to LEAPs areas. In many cases the boundaries are the same. To ensure a consistent approach to the definition of CAMS areas, they have been based largely on surface water catchments, but may reflect the boundaries of groundwater units that feed the surface water catchment.

### 2.3.1. Corridor CAMS

There are particular issues relating to the rivers Severn, Trent and Thames. The management of water resources in the contributing CAMS areas is largely dependent on policies linked to the management of the major river. An overriding abstraction management strategy for the river is therefore required prior to the assessment of smaller tributary, and contributory, CAMS areas. These have been named "corridor" CAMS.

These rivers have control rules associated with them that detail how they are managed. For example, there are specific points at which the flow in the river must not fall below a specified level. Some of these rules are statutory and others are established in licensing arrangements. There are also other catchments that may have such rules. The development of the CAMS may identify that changes to these control rules are necessary. Due to the time required to make changes to legislation, this would be one of the actions included in the strategy for achievement in the six-year period of the CAMS. This may delay any other actions that depend on changes to the control rules.

This definition resulted in a total of 129 CAMS areas covering England and Wales, illustrated on the map in **Figure 1**.

## 2.4. Production schedule of CAMS

Once the CAMS areas were defined, the order of CAMS production was determined. A number of factors were taken into account including international and national designations and over-abstraction problems. CAMS is a cyclical process whereby all catchments will enter the cycle over the first six years and subsequently be reviewed. It will then be an ongoing process to achieve and maintain sustainable management of resources. The planned production schedule of CAMS areas is denoted by the numbering in **Table 5** (page 32). Areas are numbered from 1 to 7 to reflect the order of production.

## 2.5. Resource assessment and management

To manage water resources effectively, we must first understand how much water is available and where it is located. This knowledge is acquired by undertaking a resource assessment and is based on the

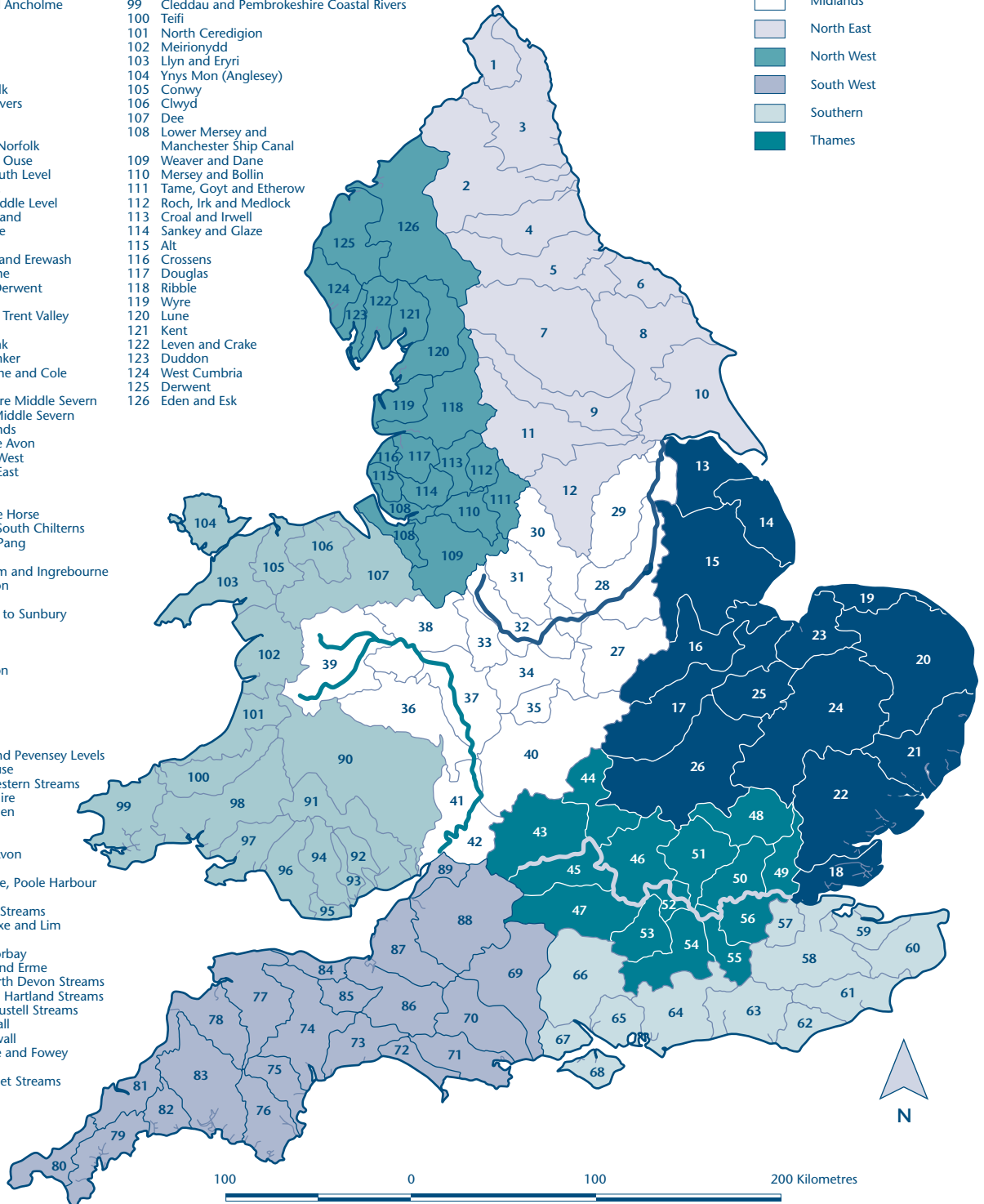
- 1 Till
- 2 Tyne
- 3 Northumberland Rivers
- 4 Wear
- 5 Tees
- 6 Esk and Coast
- 7 Swale, Ure, Nidd and Upper Ouse
- 8 Derwent
- 9 Wharfe and Lower Ouse
- 10 Hull and East Riding
- 11 Aire and Calder
- 12 Don and Rother
- 13 Grimsby and Ancholme
- 14 Louth
- 15 Witham
- 16 Welland
- 17 Nene
- 18 South Essex
- 19 North Norfolk
- 20 Broadland Rivers
- 21 East Suffolk
- 22 North Essex
- 23 North West Norfolk
- 24 Cam and Ely Ouse including South Level
- 25 Old Bedford, including Middle Level
- 26 Upper Ouse and Bedford Ouse
- 27 Soar
- 28 Lower Trent and Erewash
- 29 Idle and Torne
- 30 Derbyshire Derwent
- 31 Dove
- 32 Staffordshire Trent Valley and Mease
- 33 Sow and Penk
- 34 Tame and Anker
- 35 Bourne, Blythe and Cole
- 36 Teme
- 37 Worcestershire Middle Severn
- 38 Shropshire Middle Severn
- 39 Severn Uplands
- 40 Warwickshire Avon
- 41 Severn Vale West
- 42 Severn Vale East
- 43 Cotswolds
- 44 Cherwell
- 45 Vale of White Horse
- 46 Thame and South Chilterns
- 47 Kennet and Pang
- 48 Upper Lee
- 49 Roding, Beam and Ingrebourne
- 50 North London
- 51 Colne
- 52 Maidenhead to Sunbury
- 53 Loddon
- 54 Wey
- 55 Mole
- 56 South London
- 57 Darent
- 58 Medway
- 59 North Kent
- 60 Stour
- 61 Rother
- 62 Cuckmere and Pevensy Levels
- 63 Adur and Ouse
- 64 Arun and Western Streams
- 65 East Hampshire
- 66 Test and Itchen
- 67 New Forest
- 68 Isle of Wight
- 69 Hampshire Avon
- 70 Dorset Stour
- 71 Frome, Piddle, Poole Harbour and Purbeck
- 72 West Dorset Streams
- 73 Otter, Sid, Axe and Lim
- 74 Exe
- 75 Teign and Torbay
- 76 Avon, Dart and Erme
- 77 Taw and North Devon Streams
- 78 Torridge and Hartland Streams
- 79 Fal and St. Austell Streams
- 80 West Cornwall
- 81 North Cornwall
- 82 Seaton, Looe and Fowey
- 83 Tamar
- 84 West Somerset Streams
- 85 Tone

- 86 Parrett
- 87 Brue, Axe and North Somerset Streams
- 88 Bristol Avon
- 89 Little Avon
- 90 Wye
- 91 Usk
- 92 Ebbw and Lwyd
- 93 Rhymney
- 94 Taff and Ely
- 95 Thaw and Cadoxton
- 96 Neath, Afan and Ogmore
- 97 Tawe, Loughor and Gower
- 98 Tywi, Taf and Gwendraeths
- 99 Cleddau and Pembrokeshire Coastal Rivers
- 100 Teifi
- 101 North Ceredigion
- 102 Meirionydd
- 103 Llyn and Eryri
- 104 Ynys Mon (Anglesey)
- 105 Conwy
- 106 Clwyd
- 107 Dee
- 108 Lower Mersey and Manchester Ship Canal
- 109 Weaver and Dane
- 110 Mersey and Bollin
- 111 Tame, Goyt and Etherow
- 112 Roch, Irk and Medlock
- 113 Croal and Irwell
- 114 Sankey and Glaze
- 115 Alt
- 116 Crossens
- 117 Douglas
- 118 Ribble
- 119 Wyre
- 120 Lune
- 121 Kent
- 122 Leven and Crake
- 123 Duddon
- 124 West Cumbria
- 125 Derwent
- 126 Eden and Esk

- Thames Corridor Abstraction Management Strategy
- Severn Corridor Abstraction Management Strategy
- Trent Corridor Abstraction Management Strategy

Environment Agency Regions

- Anglian
- EA Wales
- Midlands
- North East
- North West
- South West
- Southern
- Thames



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Figure 1 | Map of CAMS areas

measurement of the various elements of the water cycle. We use information from rain gauges, together with measurements of groundwater levels in our network of observation boreholes and of river flows from our network of gauging stations to assess the water resources of England and Wales.

The measurement of groundwater levels and river flows reflects the fact that the natural regime has been modified by human activities, including abstractions and discharges. Through accurate characterisation and quantification of the many natural and man-made features operating within a catchment, we establish a baseline assessment of our catchment. We also assess the pressures operating within it and the type of management regime that will enable allocation of resources through abstraction licensing without causing environmental degradation.

To achieve a sustainable water management regime, the Agency must balance the needs of abstractors with those of the environment. Through the CAMS process we aim to ensure a consistent approach to the assessment and management of water resources, so that licence applications on rivers with similar hydrological, environmental and developmental characteristics are determined in a consistent way. To do this successfully, we are guided by a series of principles that define our approach to resource management. These principles are to:

- secure the proper use of water resources for all purposes, including environmental need;
- protect the environment by:
  - identifying a minimum flow or groundwater level below which abstraction may be curtailed or augmented;
  - protecting flow and level variability across the full range of regimes from low to high conditions;
  - protecting the critical aspects of the water environment including, where relevant, habitats that are dependent upon river flows or water levels;
  - recognising that some watercourses or wetlands are more sensitive than others to the impact of flow or level changes;
- ensure no derogation of existing protected rights;
- protect other legitimate river users' interests;
- be able to incorporate existing and future local requirements such as flows to estuaries;
- take account of water quality considerations throughout the catchment in both surface waters and groundwater.

### 2.5.1. Water resource management units

Within and between catchments there are variations in characteristics. However, in order to measure, manage and regulate effectively, we need to recognise similarities in catchment characteristics, and acknowledge and manage the risks and benefits of this within a structured approach. For the resource assessment within CAMS, the catchment areas are divided into water resource management units (WRMUs), which define the largest subdivision of the catchment that can be managed in the same way. Essentially, it is a unit that we treat as if it is homogeneous.

### 2.5.2. Management of river abstractions

In some cases, site-specific operating rules for managing river abstractions have been developed. However, most commonly, conditions are included in licences that require abstraction to cease or be reduced when a river flow or level falls below a specified level. These "hands-off flows" may be set to protect features that are locally unique to the water resource management unit or are significant on a catchment scale.

To ensure that flows do not fall artificially below a certain level and to maintain flow variability across the range, hands-off flows may be applied on a tiered basis. As more of the available water is allocated to abstraction, licences are issued with increasingly restrictive hands-off flows, which ensures sufficient water continues to be available for the environment. A consequence of this management regime is decreasing reliability of abstraction licences such that, in drier years, the licences with higher hands-off flows will prevent abstraction more frequently as lower flows are experienced.

### 2.5.3. Resource balance

As more licences are issued, there is decreasing reliability of available water for those seeking new licences. To ensure that a consistent and structured approach is applied to water management and to ensure that information on catchment-based allocations is available, the Agency calculates a water balance for each water management unit based on its characterisation. The elements of the water balance calculation are river flows, groundwater recharge, abstractions, discharges, and a resource allocation for the environment and any other water uses or features that require protection.

The resource balance may be approached in a number of different ways depending on the hydrological type and degree of detail appropriate for the management

unit. For a sub-catchment drained by a river with a seasonally variable and ecologically sensitive flow regime, particularly at low flows, a monthly breakdown of resource balance would be necessary. In a groundwater unit without links between the groundwater and sensitive environmental features, an annual approach may be adequate. The resource balance will show the acceptability of the current abstraction regime in the unit and the quantity and timing of resource potentially available for further abstraction.

## 2.6. Resource availability status

To provide information on the availability of water resources within a catchment, a classification system has been developed. This “resource availability status” indicates the relative balance between committed and available resources, showing whether licences are likely to be available and highlighting areas where action is needed to reduce current abstraction.

Resource availability status is a complex concept because water resource availability varies throughout the year. The status categories have therefore been defined in a way that enables an integrated approach to surface and groundwater and the definitions to be used in a range of circumstances, for example, on a monthly basis for a dry year, or for an average year. The flow in a river varies according to the preceding weather conditions. High flows typically occur after periods of intense rain, usually in the winter. These high flows will then fall during periods with no rain.

Low flows are typically the flow that occurs in a river after several weeks of dry weather, especially in the summer. In most cases these classifications are applied at low flow periods. As a result, it can only be an indicative classification. There may be particular circumstances or arrangements that may not be covered by the status for a unit. For example, even in units classified as “No water available”, licences for very small quantities of water or for non-consumptive purposes such as small hydropower schemes may be available throughout the year, or water may be available only at times of higher river flow. CAMS documents will provide a clearer indication of what the classification means in each area. Anyone interested in discussing a specific case should contact their local Agency office.

There are four categories of availability, allowing presentation of resource availability status of units on maps. This will help us to show the variability across and within catchments and, where appropriate, on a seasonal basis. It is important to note that whilst the Agency has a duty to protect the full amount of water that an abstractor is licensed to take, the actual amount of water that is abstracted may be less than this. The definition of an “over licensed” unit in **Table 1** relates to this type of circumstance. These categories are given in **Table 1**.

The Agency has a legal duty to ensure that new abstractions do not impact on existing rights. When setting resource availability criteria, the resource commitment for abstraction is taken as the requirement to meet licensed allocations, rather than that required to meet current levels of actual abstraction. However, we have also taken into account

**Table 1** | Resource availability status categories

Indicative resource availability status	Definition (relating to the availability of water for abstraction licences).
Water available	Water likely to be available at all flows including low flows. Restrictions may apply.
No water available	No water available for further licensing at low flows although water may be available at higher flows with appropriate restrictions.
Over-licensed	Current actual abstraction is resulting in no water available at low flows. If existing licences were used to their full allocation they would have the potential to cause unacceptable environmental impact at low flows. Water may be available at high flows with appropriate restrictions.
Over-abstacted	Existing abstraction is causing unacceptable environmental impact at low flows. Water may still be available at high flows with appropriate restrictions.

the actual rates of abstraction, as we feel it is beneficial for water resource management purposes. “Over-abstracted” represents abstraction that is already unsustainable whereas “over-licensed” represents the potential for damage should the full licensed amount be abstracted. This categorisation helps to distinguish the type of resource recovery measures and the degree of urgency required.

In units that are classed as “Water available”, licences may be granted. As more licences are granted and the amount of water available diminishes, restrictions are likely to become increasingly severe, for example hands-off flow conditions attached to licences may become higher. This, in turn, reduces the reliability of those licences to abstractors. Ultimately, the scale of restrictions involved will make them impractical for most purposes. At this point there is effectively no water available.

In units classed as “No water available”, new licences will generally not be granted for abstraction at low flows. There may be some exceptions to this, such as licences for very small quantities, for non-consumptive purposes where water is returned close to the point of abstraction or where there is some resource augmentation such as winter storage. Licences may be available for abstraction at times of higher flow but these will have restrictions, such as hands-off flow conditions, to protect the low flow situation and flow variability. Information should be sought from the local Agency office.

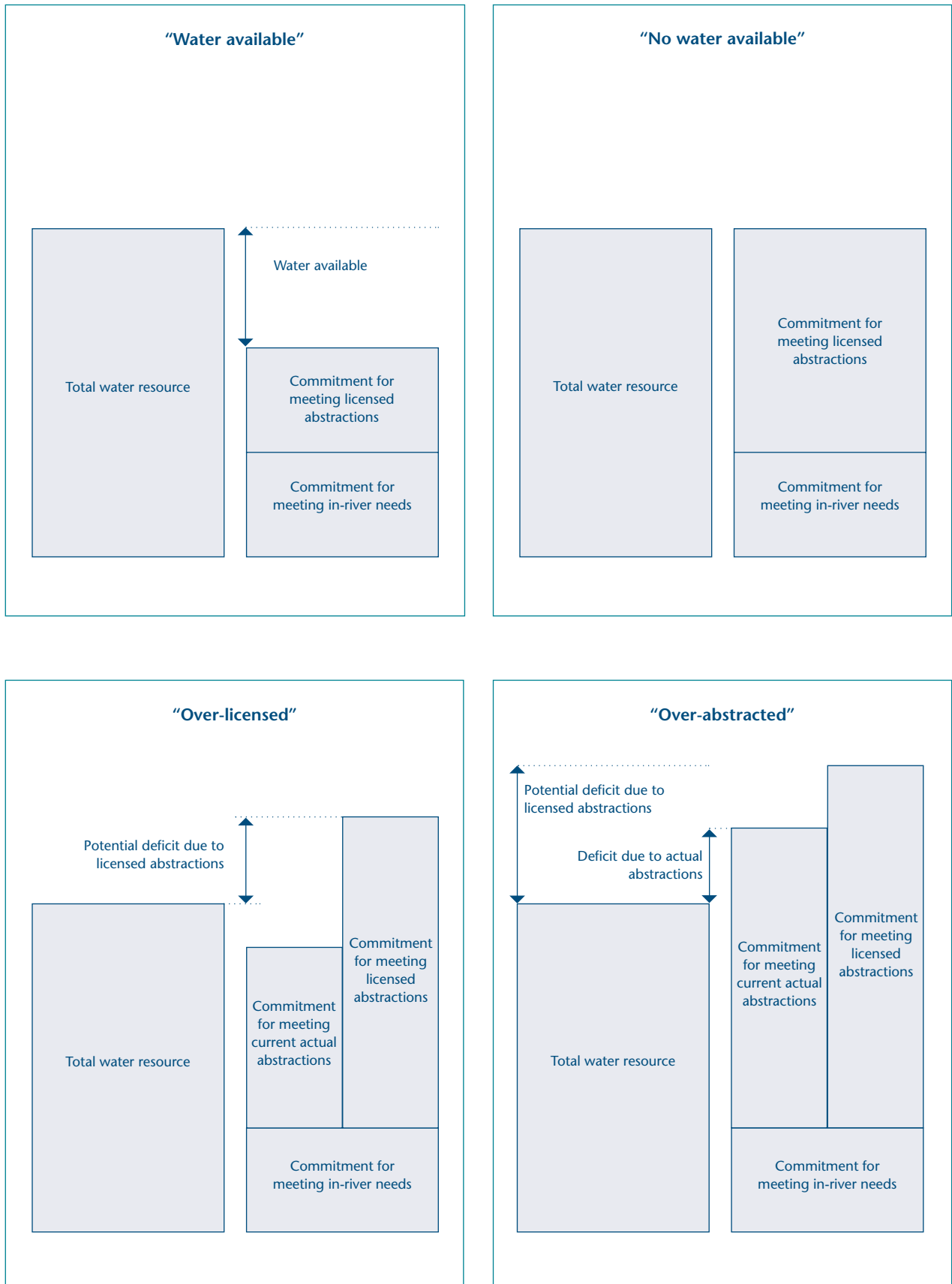
Where resources are in deficit – the “Over-licensed” and “Over-abstracted” categories – new licences will generally not be granted for abstraction at low flows. Some reduction in the volume licensed for abstraction at low flows may also be necessary to achieve a sustainable situation. Resource recovery actions range from simple variations to release proportions of licences that are not used, through water efficiency and waste minimisation measures, to significant variations or revocation of licences. Impacts on existing abstractors are likely to be more significant in order to resolve an “over-abstracted” situation than an “over-licensed” one. However, even in these resource availability categories there may still be licences available for abstraction at times of higher flow with appropriate restrictions to protect the environment at low flows.

An illustration of the concept of resource availability status at low flows is provided in **Figure 2**.

## 2.7. Sustainability appraisal

When considering a licence application, the Agency needs to have regard to its duty (under section 39 of the Environment Act 1995) to take account of costs and benefits. As CAMS underpin licence determination, the development of the strategy also needs to take account of this duty. To help us achieve this, a process has been devised that enables us to consider the Government’s four objectives of sustainable development (relating to environment, economics, society and resource use) as a CAMS is developed. This “sustainability appraisal” process uses a largely qualitative approach to consider what the resource availability status for each water resource management unit should or could be after each six-year cycle. In catchments that are “over abstracted” or “over-licensed”, this may involve recovering some resources. In units where there is some water available, the process defines the resource availability status that could be reached, but should not be exceeded. It also allows the appraisal of options for managing abstraction within the catchment including recovering water resources, by taking into account the implications of different options on all aspects of sustainability. Options are screened and refined to identify those that will achieve the greatest environmental benefits with the lowest social and economic impacts.

Where it is clear that a qualitative approach is inadequate, for example, where it is proposed that licences need to be varied or revoked, there will be some quantification of costs to abstractors included in the appraisal process.



**Figure 2** | Illustration of the concept of resource availability status at low flows

# The CAMS process

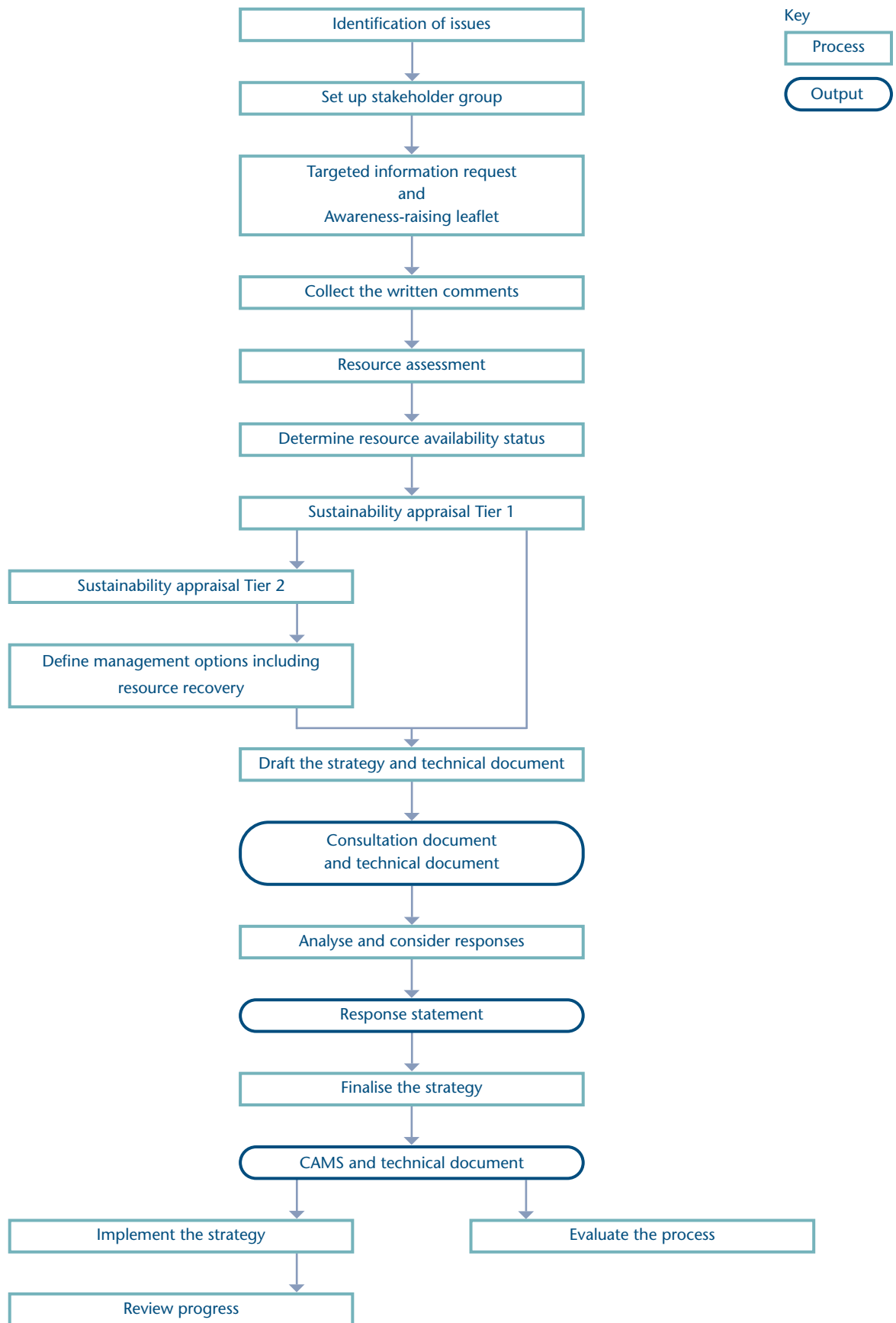
The previous chapters of this document have given an overview of CAMS and described the key concepts and principles involved. This chapter focuses on how CAMS will be developed at a local level. It introduces the different stages involved and explains the activities that occur at each stage.

A flow diagram is given in **Figure 3** that identifies the key stages of developing a CAMS. In the following pages, five key elements of the CAMS process are described in detail. The elements are:

- resource assessment and resource availability status
- sustainability appraisal
- consultation
- CAMS documents
- implementation of the strategy and evaluation of the process.

**Figure 3** is repeated in **Figures 4 to 8** with the relevant stages highlighted.

A CAMS may take up to two years to develop, from identifying the issues to the publication of the final strategy and supporting technical document. The timescale will vary depending on the complexity of the issues in a catchment and the availability of information. For all CAMS, the period of formal consultation will be three months. A preliminary timetable for each CAMS is given in an awareness-raising leaflet (see 3.3, page 18).



**Figure 3** | The CAMS process

## 3.1. Resource assessment and resource availability status

As part of the resource management, a proportion of the total resource needs to be allocated to the environment and to other water uses or interests. The Agency must be aware of these “in-river” needs. Information is gathered from staff dealing with water resources, fisheries, navigation, recreation, conservation and water quality. Knowledge from the LEAPs process is also utilised.

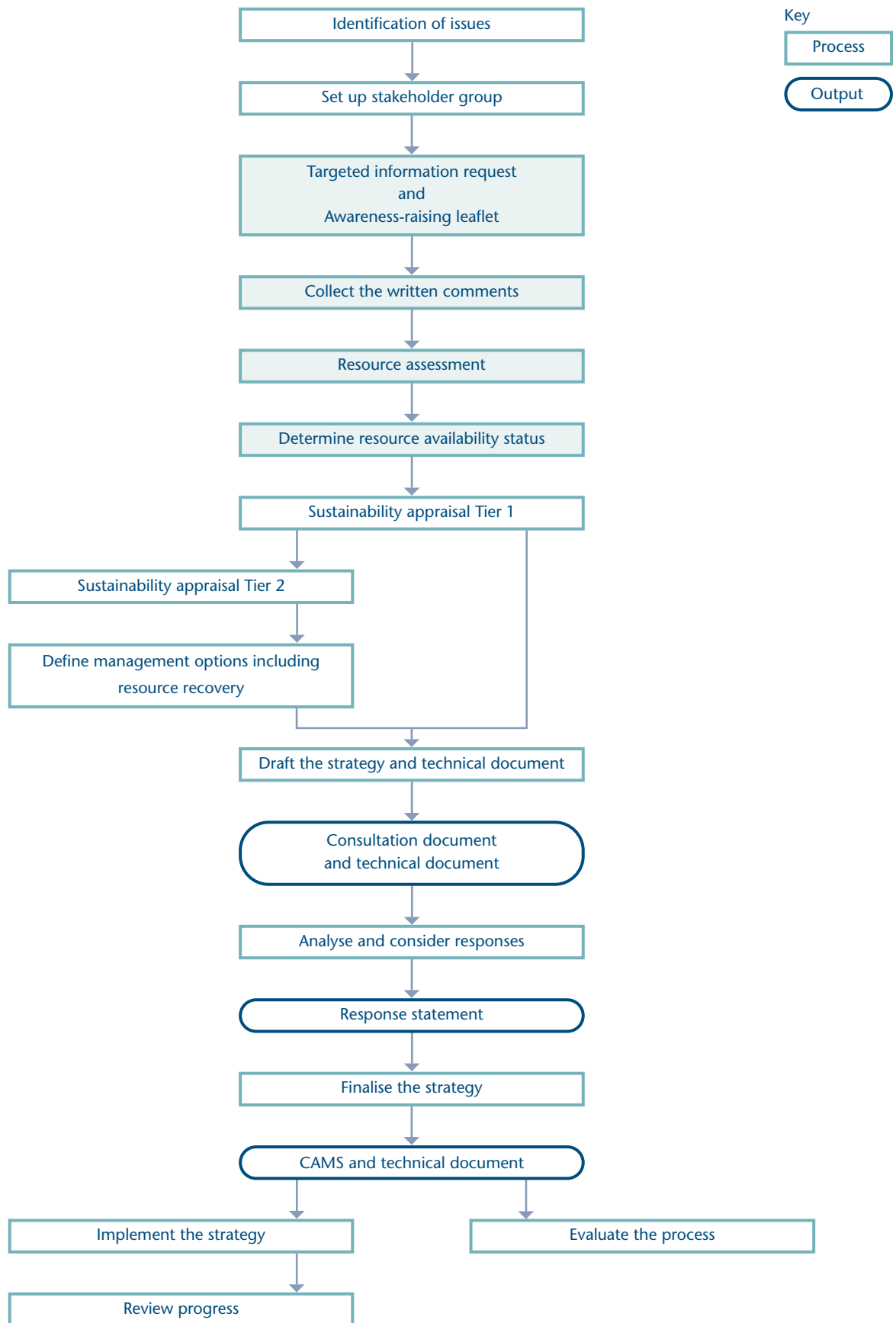
To ensure that all needs are identified, information is also gathered from individuals and organisations representing particular interests. This is the **targeted information request**. The wider public is also given the opportunity to contribute to this. They are invited to comment through the **awareness-raising leaflet** and the Agency then **collects the written comments**.

The Agency then works through the various stages involved in the resource assessment. A **resource assessment** framework has been developed by the Agency that aims to achieve consistency where appropriate while retaining the flexibility of approach required to be applicable to the range of catchments or water resource management unit characteristics. The Agency identifies the elements of the framework that need to be applied to each unit. This results in an assessment of the water resources of each unit. We then take account of the artificial influences (existing abstractions and discharges) in the unit. The allocation of water for in-river needs is also assessed using the information gathered.

The calculated resource balance then allows us to **determine the resource availability status** of each unit. This is indicated on maps of the water resource management units in the CAMS documents.

The methodology for resource assessment and management also provides a mechanism for managing licences by dictating the restrictions that will apply to new licences. It identifies necessary variations to licence restrictions as renewal applications for time-limited licences are determined. These factors contribute to the final licensing strategy.

The relative timing of these different stages, and links between them, are illustrated in **Figure 4**.



**Figure 4** | The resource assessment and resource availability status elements of the CAMS process

## 3.2. Sustainability appraisal

Each CAMS undergoes a sustainability appraisal to ensure that the strategy produced has considered the potential impact on environment, society, economics and resource use. This appraisal is largely qualitative.

The sustainability appraisal process has two stages, as illustrated in **Figure 5**.

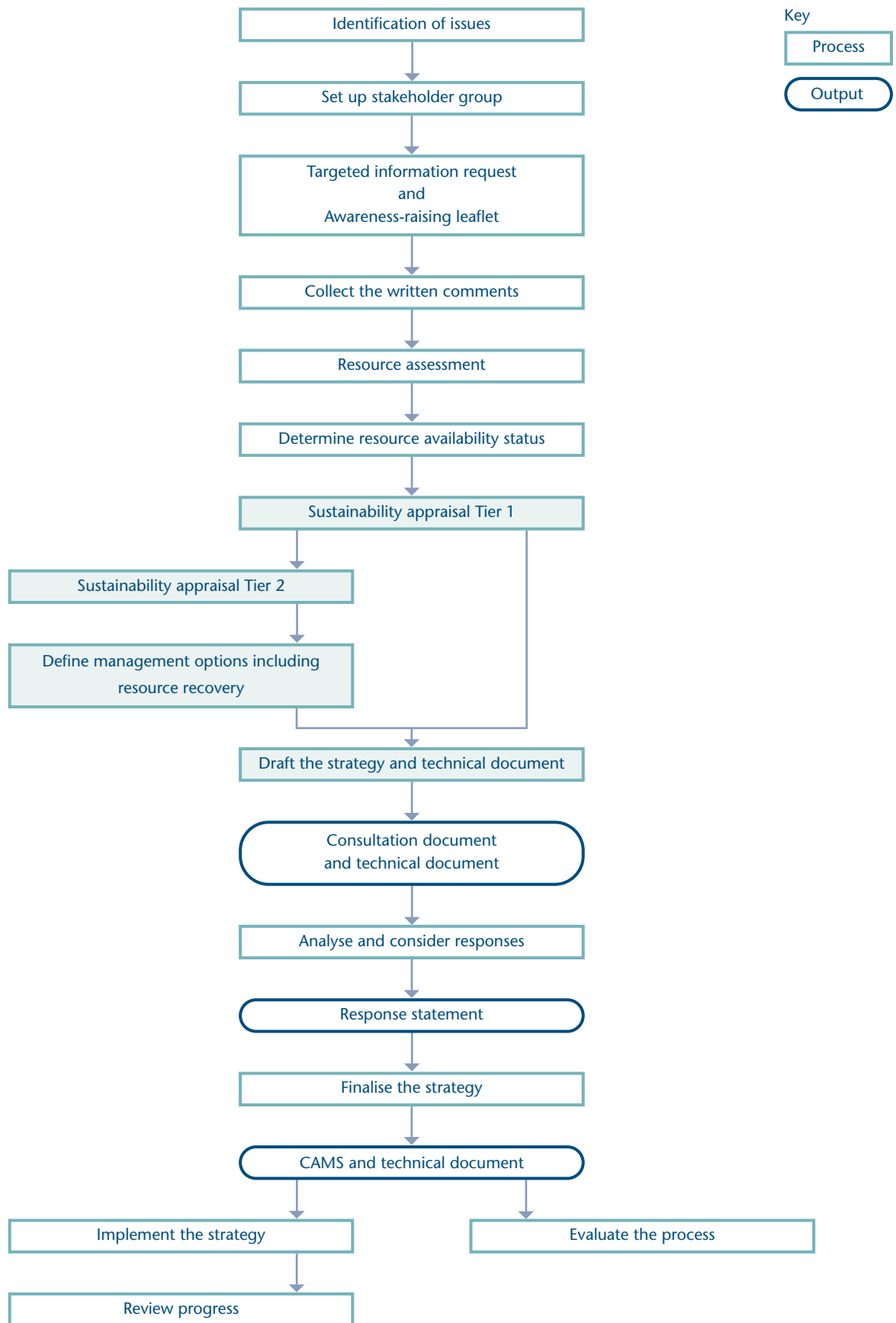
**Sustainability appraisal Tier 1:** This stage is undertaken for all water resource management units in a CAMS area. The aim is to define the resource availability status for each unit that should or could be achieved after each six-year cycle. In catchments that are “over-abstracted” or “over-licensed”, a resource availability status is defined that we aim to achieve in the six-year period, this may include recovering some resources. In units where there is some water available, the process defines the resource availability status that can be reached, but should not be exceeded. Environmental, social, economic and resource use factors are considered to determine which status is appropriate.

Tier 1 is undertaken by the Agency, with the involvement of a group of key stakeholders. There is also an opportunity for other interested parties to provide written comment.

Where the status defined under Tier 1 can be reached by managing the catchment according to the Resource Assessment and Management Framework and with no impact on existing licences, a Tier 2 appraisal is not always needed. In these cases a proposed strategy for managing the catchment is developed after Tier 1.

**Sustainability appraisal Tier 2:** Once the appropriate status has been determined, the options for managing or restoring the sustainable balance within the unit and are assessed through Tier 2. For “over-licensed” or “over-abstracted” units these options may include recovery of some resources. The Tier 2 assessment defines the management and recovery options and appraises the environmental, economic, social and resource implications of implementing them. Tier 2 also includes some quantification of the costs to abstractors of the options under consideration.

Tier 2 is undertaken by the Agency with information on the implications gathered from the stakeholder group. Once the options have been refined, they are proposed in the consultation document for wider comment. An indication of the Agency’s preferred option(s) is given. Further refinements may be necessary in the light of the responses to the consultation before an option is finally selected.



**Figure 5** | Sustainability appraisal elements of the CAMS process

### 3.3. Consultation

Consultation is an integral part of the CAMS process and there are various stages that provide the opportunity for interested organisations and individuals to be involved. Some elements of the consultation involve a “stakeholder group” and others involve all interested parties. This is illustrated in **Figure 6**. To ensure the CAMS process is consistent, the process illustrated is the framework for consultation that will be applied in all areas. However, as the level and type of interest will vary between CAMS areas, there is also some flexibility to make the scale and nature of consultation appropriate for the individual area.

To take account of the views and water needs of stakeholders early in the process, a **stakeholder group is set up** for each CAMS. This consists of around eight to 10 key stakeholders identified in the first stage of the process and aims to ensure that interests relevant to the CAMS are represented.

At this stage, there is an **awareness-raising leaflet**, which clearly sets out the timetable of the key stages and the opportunities to be involved. This is distributed to a wide range of interested parties.

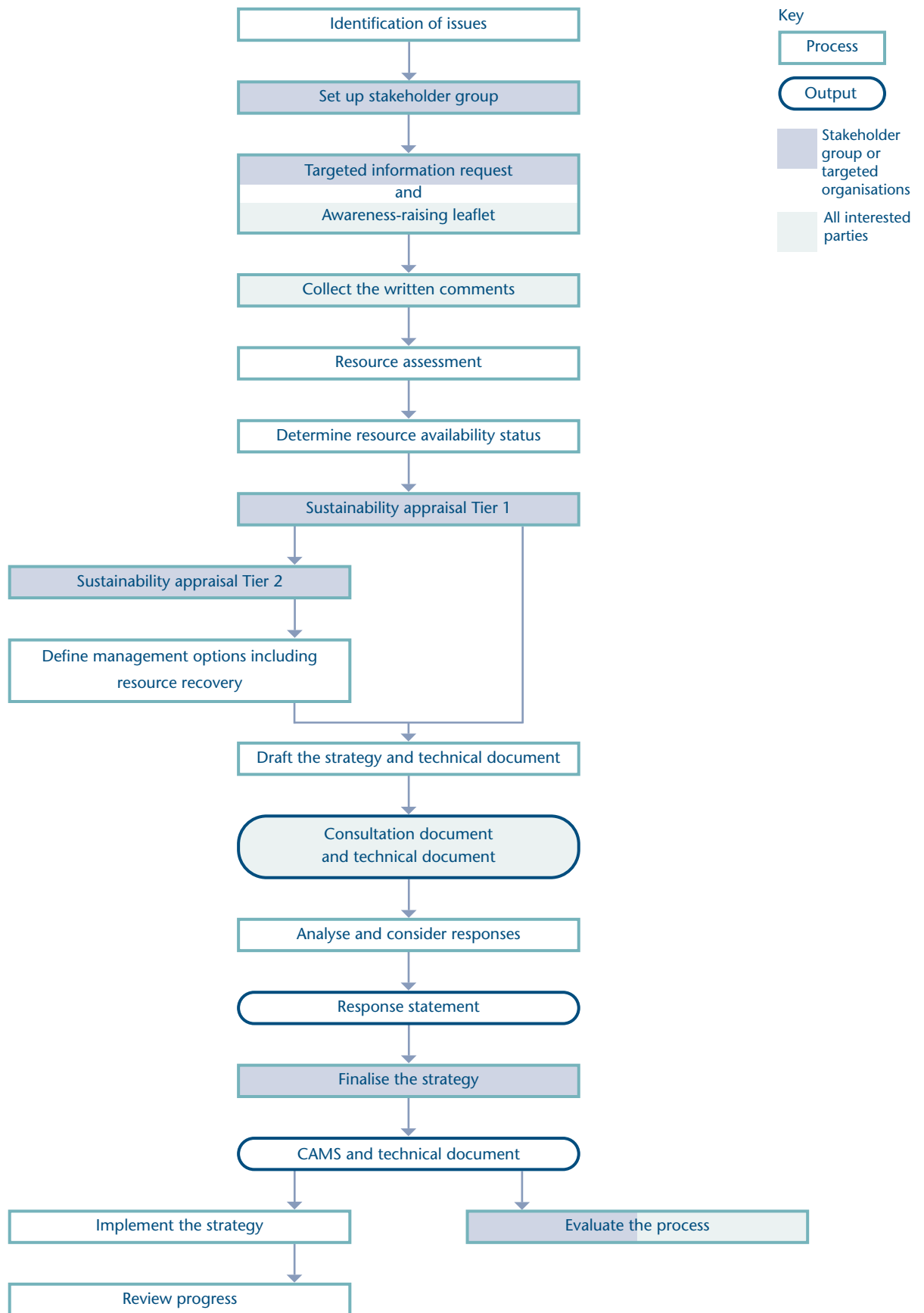
Before the resource assessment, the Agency gathers information on catchment water needs, firstly from relevant staff, then from a targeted group of interested parties. The latter stage is the **targeted information request**. The stakeholder group can contribute information and other abstractors or interest groups may also be contacted, where appropriate. So that the interests of the wider public are also reflected at this stage, they are invited, through the leaflet, to submit **written comments**. These are considered by the Agency and discussed with the stakeholder group.

The method used to calculate the resource assessment for a CAMS is not open to consultation, as the Agency has developed a consistent framework that is applicable to all units. However, we will provide the stakeholder group with an overview of the framework and will explain how the different elements will be applied to each unit in the CAMS.

The stakeholder group assists the **sustainability appraisal**. In Tier 1, they are asked to contribute information on the benefits and cost implications required to define what the resource availability status of units should or could be after the six-year strategy period. Other parties, such as abstractors, may also be contacted for information. The group is then invited to express their views on what the status should be. The Agency makes the final decision, taking those views into account. For those units where a Tier 2 appraisal is necessary, the Agency identifies the options and the group is asked to provide any additional information on the implications of different options. Taking this information into account, the Agency then decides on its preferred option(s).

The opportunity for everyone interested in the CAMS to provide comments on the proposed strategy is the formal consultation stage of the process. A **consultation document** is produced that presents the current resource availability status of units, the status we are aiming for or should not go beyond in the six years of the CAMS, and the draft strategy for managing licences. Where it is necessary to recover resources, the possible options are set out with an indication of the Agency’s preferred option(s). There is a period of three months in which responses can be made, either in writing or on the Agency’s website.

The responses received to the consultation are analysed and carefully considered by the Agency, and the issues are discussed with the stakeholder group. The Agency then **finalises the strategy**, taking the views of the group into account.



**Figure 6** | Consultation elements of the CAMS process

## 3.4. CAMS documents

A series of documents is produced as each CAMS is developed. When these documents are produced in relation to the wider CAMS process is illustrated in **Figure 7**.

In the early stages of the development of a CAMS, an **awareness-raising leaflet** is produced, which is distributed widely within the CAMS area. This is designed to raise awareness of the development of the CAMS and the ensuing formal consultation exercise. It also invites interested parties to make written comments to the Agency, highlighting specific interests and the associated water requirements.

Following the initial pre-consultation stage, a **consultation document** is produced. This provides an opportunity for wide involvement in considering the options necessary to deliver the future strategy for the catchment. In units where water resources are available, the consultation document proposes a draft strategy for dealing with new licence applications and for managing existing abstraction licences, including renewals of time-limited licences. Where current levels of licensed abstraction exceed the total resource, options for resource recovery may be proposed, in addition to a draft strategy for dealing with new licence applications and renewals. An outline structure of the consultation document is provided in **Table 2**.

After the consultation period, the responses are analysed and considered as the strategy is finalised. At this stage, a **response statement** is produced, summarising the responses received and highlighting the key issues raised. This document will be sent to all respondents and copies will also be available from Agency Area offices.

Once the strategy is finalised, the **Catchment Abstraction Management Strategy** document is produced. The structure of this document is broadly similar to that of the consultation CAMS, but it presents only the final strategy, rather than options or a draft strategy. An outline of the document is provided in **Table 3**. Once published, this document will be sent to all respondents and other interested parties, and copies will be available from Agency Area offices. We intend to make the consultation document, response statement and Catchment Abstraction Management Strategy for each CAMS available on the Agency's website.

A CAMS **technical document** is produced containing the detailed information on which the strategy has been based. There will be two technical documents for each CAMS. The first will support the consultation document and will then be revised following the consultation period so that there is a second technical document to support the CAMS document. They will contain the technical information on which the CAMS is based including detail of the resource assessment, the sustainability appraisal and stakeholder involvement. The technical documents will only be available on CD-ROM but a hard copy will be made available for viewing at the relevant local Environment Agency office. An outline contents list of the CAMS technical document is provided in **Table 4**.

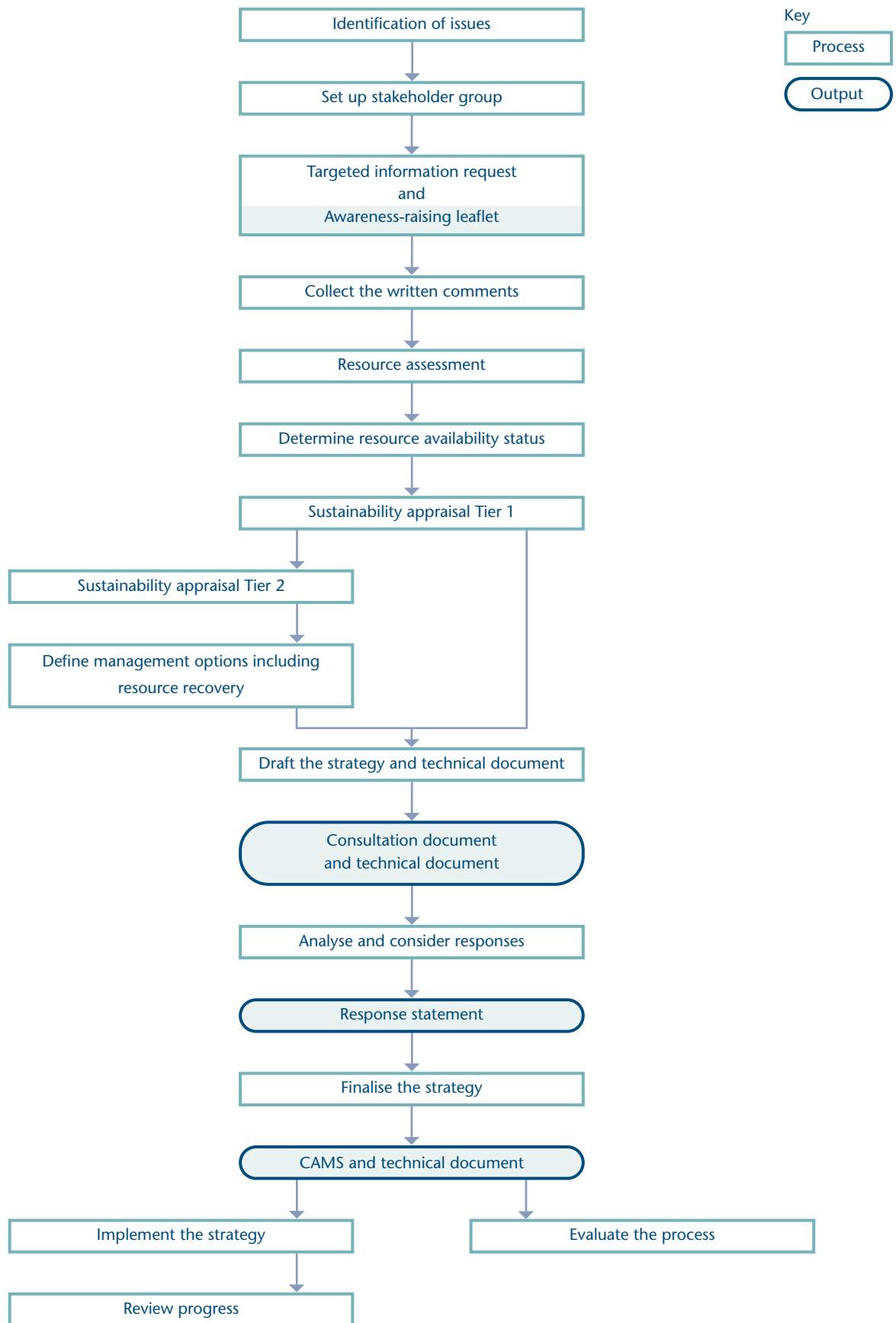


Figure 7 | CAMS documents

**Table 2** | Outline structure of the CAMS consultation document

<p><b>CAMS Consultation Document</b></p> <p>Foreword</p> <p>1 Introduction</p> <p>2 Consultation process</p> <p>3 The CAMS area</p> <p>4 Resource assessment and resource availability status</p> <p>5 Proposed licensing strategy</p> <p>    5.1 Sustainability appraisal</p> <p>    5.2 Existing licensing strategy</p> <p>    5.3 Catchment overview of proposed licensing strategy</p> <p>    5.4 Water resource management unit X (“Water available”)</p> <p>        5.4.1 Resource availability status and results of the sustainability appraisal</p> <p>        5.4.2 Guidance on the assessment of new applications – proposed strategy</p> <p>        5.4.3 Management of existing licences and renewals – proposed strategy</p> <p>    5.5 Water resource management unit X (“Over-abstracted” or “Over-licensed”)</p> <p>        5.5.1 Resource availability status and results of the sustainability appraisal</p> <p>        5.5.2 Guidance on the assessment of new applications – proposed strategy</p> <p>        5.5.3 Management of existing licences and renewals – proposed strategy</p> <p>        5.5.4 Changes to existing licences</p> <p>            ● Sustainability appraisal</p> <p>            ● Other potential changes to existing licences</p>
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**Table 3** | Outline structure of the Catchment Abstraction Management Strategy

<p><b>Catchment Abstraction Management Strategy</b></p> <p>Foreword</p> <p>1 Introduction</p> <p>2 Consultation process</p> <p>3 The CAMS area</p> <p>4 Resource balance and resource availability status</p> <p>5 Licensing strategy</p> <p>    5.1 Catchment overview of licensing strategy</p> <p>    5.2 Water resource management unit X (“Water available”)</p> <p>        5.2.1 Resource availability status and results of the sustainability appraisal</p> <p>        5.2.2 Guidance on the assessment of new applications</p> <p>        5.2.3 Management of existing licences and renewals</p> <p>    5.3 Water resource management unit X (“Over-abstracted” or “Over-licensed”)</p> <p>        5.3.1 Resource availability status and results of the sustainability appraisal</p> <p>        5.3.2 Guidance on the assessment of new applications – presumption against the granting of new licences</p> <p>        5.3.3 Management of existing licences and renewals</p> <p>        5.3.4 Resource recovery strategy and other changes to existing licences</p> <p>6 Post-CAMS appraisal</p>
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**Table 4** | Outline contents of the CAMS technical document

Description of catchment	<ul style="list-style-type: none"> <li>● Topography</li> <li>● Geology (solid and drift)</li> <li>● Soils</li> <li>● General land use</li> </ul>
Hydrology and hydrometry	<ul style="list-style-type: none"> <li>● Description of catchment hydrology</li> <li>● Measurement network (gauging stations, observation boreholes, rain gauges)</li> <li>● Hydrometric data</li> </ul>
Hydrogeology	<ul style="list-style-type: none"> <li>● Description of catchment hydrogeology</li> <li>● Detail of any relevant groundwater studies/models</li> </ul>
Ecology/Conservation/ Fisheries	<ul style="list-style-type: none"> <li>● Ecological quality of rivers in the catchment</li> <li>● Conservation sites</li> <li>● Description of fisheries status</li> </ul>
Licensed Abstractions	<ul style="list-style-type: none"> <li>● Summary by use for each unit</li> </ul>
Other licensing information	<ul style="list-style-type: none"> <li>● Indicative licence conditions</li> <li>● Licences to be renewed in CAMS period</li> </ul>
Other catchment activities	<ul style="list-style-type: none"> <li>● Navigation</li> <li>● Drainage</li> <li>● Recreation</li> </ul>
Water quality	<ul style="list-style-type: none"> <li>● Water quality in the catchment</li> <li>● Consented discharges</li> </ul>
Resource assessment/ Resource availability status	<ul style="list-style-type: none"> <li>● Catchment wide conceptualisation</li> <li>● CAMS river assessment points and groundwater units</li> <li>● Detailed conceptual understanding</li> <li>● Environmental sensitivity of rivers to abstraction</li> <li>● Surface water resource assessment</li> <li>● Groundwater resource assessment</li> <li>● Integrated surface water and groundwater resource assessment results (including definition of water resource management units)</li> </ul>
Sustainability appraisal	<ul style="list-style-type: none"> <li>● Explanation of the CAMS sustainability appraisal process</li> <li>● The appraisal pro forma</li> <li>● The appraisal process</li> </ul>
Consultation	<ul style="list-style-type: none"> <li>● Stakeholder group membership</li> <li>● Others consulted as part of targeted information request/sustainability appraisal</li> <li>● Summary of written comments</li> <li>● Details of meetings</li> <li>● Respondents to formal consultation</li> </ul>
Links to relevant plans/strategies	<ul style="list-style-type: none"> <li>● Water Resources Strategies</li> <li>● Drought Plans</li> <li>● Water Company Water Resources Plans</li> <li>● Water Company Drought Plans</li> <li>● Biodiversity Action Plans</li> <li>● Restoring Sustainable Abstraction Programme</li> <li>● Habitats Directive/Birds Directive</li> <li>● Water Framework Directive River Basin Management Plans</li> </ul>

## 3.5. Implementation and evaluation

Until each CAMS has been finalised and published, applications for new licences and licence variations will continue to be determined according to the existing licence practice for the catchment.

Once the CAMS is published, we **implement the strategy**. The CAMS may show that the existing licensing strategy is still applicable and should therefore be retained. Where the resultant licensing strategy is different from the existing one, this will be implemented, but transitional arrangements may be needed in some cases.

In catchments or water resource management units where resources are available, licences will continue to be granted, subject to the normal considerations applying to licence determination. The resource assessment methodology provides the basis for the management of licensing by dictating the conditions that need to be applied to any licences issued for the catchment. As more licences are granted, the increasing severity of restrictions on licences means that, over time, they become impractical for most purposes (because they have reduced reliability) and the result is that fewer licences are granted.

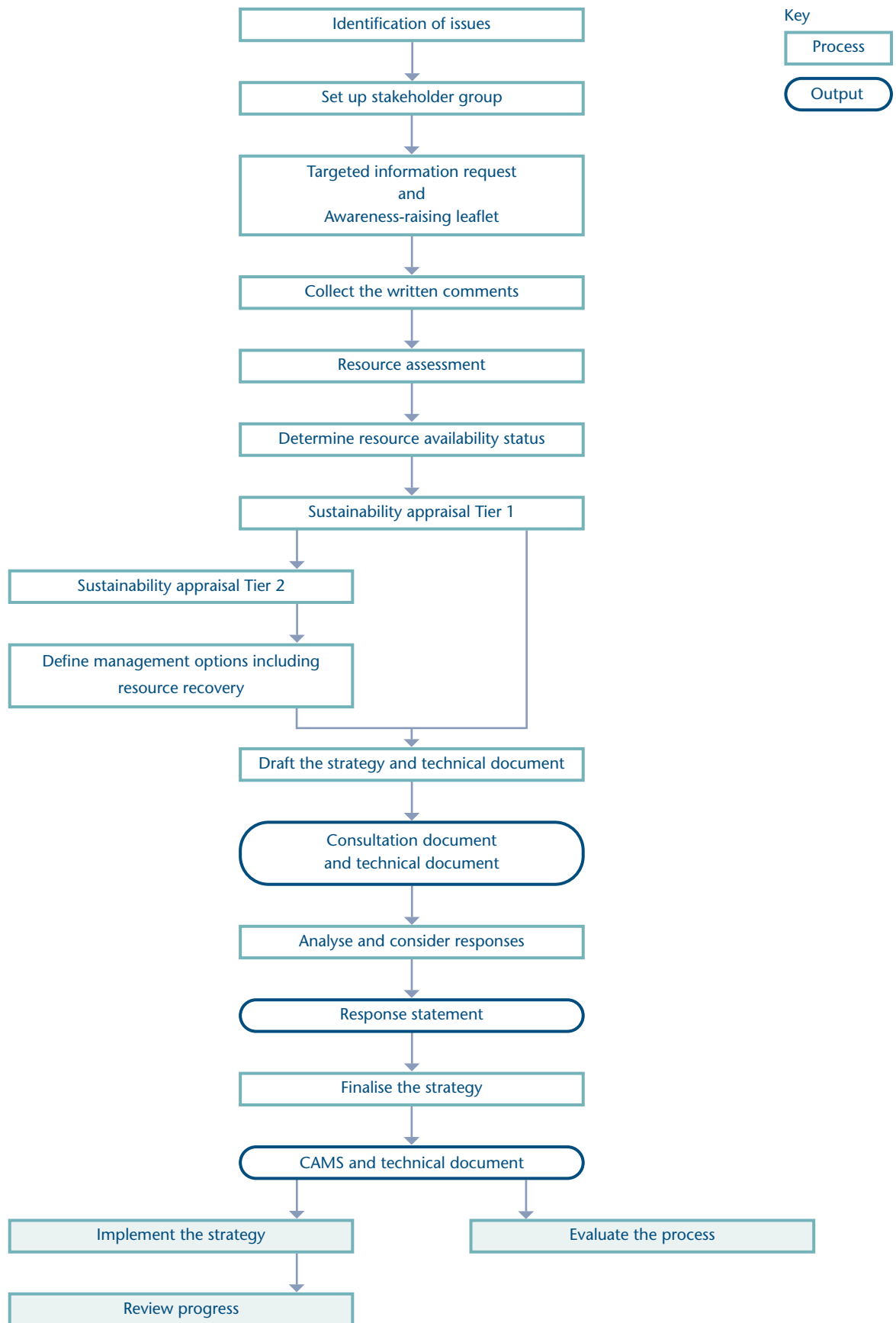
In units that are “over-abstracted” or “over-licensed”, the strategy may contain measures for the recovery of resources. These are likely to include efficiency and waste minimisation measures, but may also need to include actions to vary, revoke or not renew active licences. This will, wherever possible, be done through voluntary agreement. Where the CAMS includes options that have a direct impact on existing licence holders we will ensure that we have carried out an appropriate level of investigation before implementing those options.

During the six-year period of the CAMS, we will **review progress** against the strategy. Progress will be reported for each CAMS on the Agency’s website.

Alongside the implementation and review of the strategy, we also **evaluate the process**. This may incorporate a variety of techniques, and assesses how stakeholders and Agency staff feel about the process, what they think worked well, where they feel the process can be improved and lessons to be learned for the next cycle.

The position of these stages is illustrated in **Figure 8**.

Six years after the start date of CAMS development, the process is repeated and the strategy reviewed.



**Figure 8** | Implementation and evaluation of the CAMS

# Licence trading

One of the objectives of the CAMS process is to facilitate licence trading. This is the acquisition of a licence, either directly from the current holder or as a result of a revocation or variation to another licence. There are two routes for trading. The first is where a licence is transferred “in situ” from the existing holder to a new holder and on the same terms, either as a whole or in part. This is the “licence succession” route where rights to abstract transfer between the parties. More details on licence succession are provided in Annexe 2 (page 36). The second route is where the grant of a new licence at one point is dependent on a change to an existing licence or licences at other points, thus transferring abstraction rights between the sites. This second type of trade, “licence relocation”, is dependent on the submission of a licence application and is therefore subject to the normal principles and regulations governing the grant of licences (see Annexe 2), but with the added factor of other licences being “traded”.

## 4.1. Licence relocation

This type of trade will mainly arise in circumstances where the Agency would otherwise, that is, but for the trade, be unable to grant a licence. This will normally be where the resource to meet the new demand would otherwise not be available and the new abstraction would therefore be unsustainable. To facilitate the granting of a new licence, the one being traded must release resources either from the same management unit as that from which the new licence will draw, or from another unit that in some way contributes to that unit. The Agency’s approach to such trades will depend upon individual circumstances. Trades would normally be at least resource neutral, but there may be circumstances where some resource benefit or enhancement should form part of the trade. Trading does not provide any short circuit to the normal licence determination process. It simply makes consideration of a new licence possible in circumstances where it would otherwise not be.

There may be circumstances where this type of trade may have clear benefits and can therefore be facilitated more rapidly. An example would be like-for-like downstream trades, such as where no change is proposed other than a relocation downstream. However, the situation may not always be straightforward, for example, in ponded rivers such as those in East Anglia. Licence relocation trades may also be relatively straightforward within linked parts of the canal system and within Internal Drainage Board areas. In all cases, however, a full licence application will be required.

## 4.2. Short-term trades

In some cases, licence relocation trades may only be required or be possible for a defined period, either because of the short-term needs of the new abstractor or because the traded licence is only available temporarily. This situation can be dealt with by a “linked trade”. The two licences involved in the transaction are linked by appropriate conditions. These reflect the details of the trade, ensuring that the conditions are enforceable whilst allowing the donor licence to retain its validity, but releasing its unused resource temporarily to the new abstractor. Again, a full application will be required for the new licence.

There may well be circumstances where existing abstractors could benefit from a trading arrangement for a short period, for example, one season. Linked licences (in this case two existing licences), could give effect to such arrangements, but time will be needed to deal with the necessary licence variations.

## 4.3. The role of CAMS

By identifying the resource availability status of resource management units, CAMS will enable resource developers to identify situations where a licence relocation trade may be the only way to achieve their objectives. CAMS will also provide the

information for the developer to identify possible donor areas or candidates where a trade may emerge.

Trading is essentially a matter between two or more parties and there will be limited opportunities for CAMS to identify specific trading opportunities. However, where a resource recovery programme is identified for an area within the CAMS, opportunities for environmentally beneficial trades may be considered as one of the recovery options. This is likely to involve significant re-alignment of current abstraction regimes that would provide benefits to the trading parties as well as to the environmental and sustainability issues within the catchment.

Whilst a few examples of licence trades have taken place in the past, CAMS are seen as a way of facilitating more trades in the future to encourage a better utilisation of scarce resources. No doubt many innovative proposals for trade will emerge and the Agency will deal with each on its own merits and in the light of its wider duties to secure the proper use of resources. Government proposals to relax requirements for applications for licences and variations will further assist opportunities for trading.

# Time-limiting of licences

## 5.1. Background

The majority of abstraction licences issued since 1965, when the present licensing system was introduced, have not been time-limited. However, time limits have increasingly been applied in recent years, usually where there have been significant uncertainties to be tested and resolved, such as environmental or resource impacts. Time limits have proved to be a fair and effective tool for managing water resources in the face of uncertainty and have therefore generally been accepted by licence holders.

With the even greater uncertainties that we now face in the light of changing climatic conditions, increasing environmental understanding and expectations, as well as a continuing demand for more water, there is a broad consensus that this is no longer compatible with the granting of permanent rights to abstract.

## 5.2. Policy

Before the Government's review of the licensing system, the Agency had approved a policy that all new abstraction licences should be time-limited. This policy, now supported by the Government, has been redefined and should increasingly contribute to the sustainable management of water resources.

The policy includes the following features:

- all new and varied licences, except in the case of reductions in volume or other similar minor changes having no environmental impact, will have time limits;
- there will be a presumption of renewal where environmental sustainability is not in question, there is continued justification of need, and water is being used in an efficient manner;
- the normal renewal period for a licence will be 12 years, but shorter or longer time limits may apply in exceptional circumstances;
- common end dates will apply to all time-limited licences linked to the CAMS cycle for the catchment in which they are situated.

## 5.3. Special circumstances for shorter-duration licences

The Agency has the discretion to apply a shorter time limit to individual licences, or in areas of a catchment, justified under one of the following categories:

- where the applicant requests it;
- where the proposal has a shorter life-expectancy or planning horizon;
- where the applicant seeks to exploit part of another under-utilised licence(s), for an agreed period, according to an agreed strategy;
- where available resources are predicted to diminish, for example, closure of sewage treatment works, cessation of mine water discharge;
- where the environmental impact is known and is acceptable within that period;
- where impact is unknown and a fixed period of monitoring is determined as appropriate;
- where it is related to a contractual arrangement, for example, under Non Fossil Fuel Obligation;
- contracts for hydropower or time-limited planning permission for mineral exploitation;
- sustainability principle, for example, where it is recognised in the CAMS that the unit is approaching full commitment;
- where it is part of an agreed strategy, for example, with a water company where reduced leakage or planning development of another source will obviate need in a short time;
- where future plans, for example, River Quality Objectives, may change the amount of water available for abstraction, or where targets are set in the Agency's plans or strategies;
- where the demand for water is uncertain or liable to change;
- where there is uncertainty about a catchment-based activity, for example, quarrying.

No minimum time limit is specified. This is a matter for discussion between the applicant and the Agency.

## 5.4. Special circumstances for longer-duration licences

There may be exceptional circumstances where, within a CAMS area, no sustainability issues are anticipated. In these cases, time-limited licences with periods greater than 12 years may be considered for schemes that contribute to environmental sustainability and that significantly reduce or replace the reliance on direct summer abstraction. Winter storage schemes that operate with off-line storage, or aquifer recharge schemes that satisfy these criteria, may qualify for longer-period licences. In such case, periods of up to 24 years may be appropriate.

A time limit for an individual licence longer than the specified norm for a catchment may also be considered in exceptional circumstances. This requires a full justification by the applicant, who will need to demonstrate all of the following:

- the lifetime of the infrastructure inseparably associated with the authorisation will extend over the desired period of validity;
- there will be continued need for the service or product associated with that infrastructure throughout the desired period of validity;
- the fullest possible appraisal of likely changes in environmental and economic circumstances that may have a bearing on the acceptability of the abstraction over the desired period of validity has been carried out and shows no significant concerns; and that
- the infrastructure development contributes to sustainable development.

There will generally be a presumption against such exceptions and each case will be considered strictly on its own merits. In these cases, the period of the licence will be a matter for discussion between the applicant and the Agency.

## 5.5. Management of time-limited licences

Time-limited licences will be managed using a common end-date approach. We need to move to a situation where all time-limited licences within a CAMS area should normally expire on the same date,

which links into the six-year CAMS cycle. Renewal periods for licences therefore need to be in multiples of six so that the CAMS and licence renewal processes remain synchronised. This approach allows the most efficient reallocation of licences within any revised resource assessments deriving from the CAMS process.

The normal renewal period for a licence will be 12 years. However, the practicalities of introducing the policy to the implementation of CAMS on a sequential basis from April 2001 means that licence end-dates for CAMS areas have initially been set at between 12 and 17 years from 2001. Adopting the common end-date approach also means that new licences will be issued with shorter time limits as the common end-date approaches, but with a strong presumption of renewal for the full 12-year period.

The licence expiry dates for catchments will determine when the CAMS for the catchments need to be finalised and published. There will need to be an appropriate lead time to allow for renewal applications to be submitted and assessed before being reissued. We expect a period of 12 months between CAMS publication and licence expiry dates to be the norm. This is illustrated in **Figure 9**.

The common expiry dates for time-limited licences in the 129 CAMS areas are given in **Table 5**.

## 5.6. Renewal of time-limited licences

Time-limited licences will carry a presumption of renewal. This means that, provided the three renewal tests can be satisfied and there are no other legal obstacles, the licence will be renewed, subject to such conditions as are considered necessary for the proper future management of the resource as determined through the CAMS process.

The three renewal tests are:

**Environmental sustainability.** One of the principal outputs from the CAMS process will be the identification of unsustainable abstraction regimes. Where these arise, the agreed strategy will also identify the preferred solution for dealing with them. Any question as to the sustainability of a particular licence within the wider context of the management strategy will therefore emerge in the course of the development of the CAMS. In these circumstances it should not normally be necessary for the licence holder to submit any new environmental information in support of the application for renewal. It is only in cases where there are environmental issues specific to

the particular licence to be renewed that supporting environmental information may need to be submitted. These will either have been identified for further monitoring when the licence was issued or will have arisen from some change in the local environment since the licence was issued.

**Continued justification of need.** This is a re-examination of the normal test of reasonableness that we must apply to the needs of any licence applicant. The duty applies equally to applications for licence renewal, which allows us to take account of the actual pattern of use during the period of the licence. In considering this use we will have regard to any special needs of the abstractor, such as for emergency drought provision or natural variation in demands, such as for meeting irrigation requirements. The examination of need will be closely allied to considerations of efficiency of water use.

**Efficient use of water.** This is an essential element in securing the proper use of water resources and we will incorporate conditions into licences that will specify the need for water to be used efficiently. We will make guidance available on what water efficiency measures we expect to see implemented. When we consider the renewal of licences we will compare the measures taken by the abstractor with this guidance. Where water efficiency conditions are included in licences for the first time, on renewal, we will seek to agree with licence holders a programme of measures that will help them to achieve more efficient use of water.

## 5.7. Non-renewal of time-limited licences

Circumstances will arise where sustainability issues may indicate that time-limited licences should not be renewed, whether at all or on the same terms. We are required to give six years' notice of non-renewal and the CAMS process will be the means for achieving this. Complete non-renewal will only be identified as a solution following full sustainability appraisal (see 3.2, page 16) and discussions with the licence holder, including possible alternative options. The Agency will also give six years' notice of renewal on terms involving significant restriction on previous entitlement.

Figure 9 | Illustration of the management of time-limited licences



CAMS cycle runs from the beginning of April to the end of March

**Table 5** | CAMS areas and common expiry dates

Region	Area	CAMS areas with order of production	Common expiry date for time-limited licences
Anglian	Central	1 Upper Ouse and Bedford Ouse 2 North West Norfolk 3 Old Bedford, including Middle Level 4 Cam and Ely Ouse, including South Level	31 March 2016 31 March 2018 31 March 2013 31 March 2015
	Eastern	1 South Essex 2 North Norfolk 3 Broadland Rivers 4 North Essex 5 East Suffolk	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2014
	Northern	1 Witham 2 Nene 3 Grimsby and Ancholme 4 Louth 5 Welland	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2014
Midlands	Region	1 Severn Corridor 1 Trent Corridor	31 March 2017 31 March 2017
	Upper Severn	2 Severn Uplands 3 Teme 4 Worcestershire Middle Severn 5 Shropshire Middle Severn	31 March 2018 31 March 2013 31 March 2014 31 March 2015
	Lower Severn	2 Warwickshire Avon 3 Severn Vale West 4 Severn Vale East	31 March 2013 31 March 2014 31 March 2015
	Upper Trent	2 Dove 3 Staffordshire Trent Valley and Mease 4 Tame and Anker 5 Sow and Penk 6 Bourne, Blythe and Cole	31 March 2018 31 March 2013 31 March 2014 31 March 2015 31 March 2016
	Lower Trent	2 Derbyshire Derwent 3 Soar 4 Idle and Torne 5 Lower Trent and Erewash	31 March 2018 31 March 2013 31 March 2014 31 March 2015
	North East	Dales	1 Swale, Ure, Nidd and Upper Ouse 2 Wharfe and Lower Ouse 3 Derwent 4 Esk and Coast 5 Tees
North East	Northumbria	1 Northumberland Rivers 2 Tyne 3 Wear 4 Till	31 March 2017 31 March 2018 31 March 2014 31 March 2015
	Ridings	1 Don and Rother 2 Hull and East Riding 3 Aire and Calder	31 March 2017 31 March 2013 31 March 2015
	North West	Central	1 Douglas 2 Lune 3 Wyre 4 Ribble 5 Crossens 6 Alt
North West	North	1 Leven and Crake 2 Kent 3 Eden and Esk 4 Derwent 5 West Cumbria 6 Duddon	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2014 31 March 2015
	South	1 Sankey and Glaze 2 Tame, Goyt and Etherow 3 Mersey and Bollin 4 Weaver and Dane 5 Roch, Irk and Medlock 6 Croal and Irwell 7 Lower Mersey and Manchester Ship Canal	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2014 31 March 2015 31 March 2015

Southern	Hampshire	1 East Hampshire 2 Isle of Wight 3 Test and Itchen 4 New Forest	31 March 2016 31 March 2017 31 March 2013 31 March 2014
	Kent	1 Stour 2 North Kent 3 Medway 4 Rother 5 Darent	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2014
	Sussex	1 Arun and Western Streams 2 Adur and Ouse 3 Cuckmere and Pevensey Levels	31 March 2016 31 March 2018 31 March 2014
South West	Cornwall	1 Seaton, Looe and Fowey 2 North Cornwall 3 Fal and St Austell Streams 4 Tamar 5 West Cornwall	31 March 2016 31 March 2017 31 March 2018 31 March 2014 31 March 2015
	Devon	1 Exe 2 Otter, Sid, Axe and Lim 3 Taw and North Devon Streams 4 Avon, Dart and Erme 5 Teign and Torbay 6 Torridge and Hartland Streams	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2014 31 March 2015
	North Wessex	1 Tone 2 Bristol Avon 3 Parrett 4 Brue, Axe and North Somerset Streams 5 West Somerset Streams 6 Little Avon	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2014 31 March 2015
	South Wessex	1 Dorset Stour 2 Frome, Piddle, Poole Harbour and Purbeck 3 Hampshire Avon 4 West Dorset Streams	31 March 2016 31 March 2017 31 March 2013 31 March 2014
Thames	Region	1 Thames Corridor	31 March 2016
	North East	1 Roding, Beam and Ingrebourne 2 Upper Lee 3 North London 4 Colne	31 March 2016 31 March 2018 31 March 2013 31 March 2014
	South East	1 Loddon 2 Mole 3 Maidenhead to Sunbury 4 South London 5 Wey	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2015
	West	1 Kennet and Pang 2 Cherwell 3 Vale of White Horse 4 Thame and South Chilterns 5 Cotswolds	31 March 2017 31 March 2018 31 March 2013 31 March 2014 31 March 2015
Wales	Northern	1 Conwy 2 Clwyd 3 Dee 4 Meirionydd 5 Llyn and Eryri 6 Ynys Mon (Anglesey)	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2014 31 March 2015
	South East	1 Rhymney 2 Taff and Ely 3 Thaw and Cadoxton 4 Ebbw and Lwyd 5 Usk 6 Wye	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2014 31 March 2015
	South West	1 Teifi 2 Neath, Afan and Ogmore 3 Tywi, Taf and Gwendraeths 4 Cleddau and Pembrokeshire Coastal Rivers 5 Tawe, Loughor and Gower 6 North Ceredigion	31 March 2016 31 March 2017 31 March 2018 31 March 2013 31 March 2014 31 March 2015

## Annexe 1:

# Links between CAMS and other initiatives

The development of CAMS has links with a large number of other initiatives relating to the management of water resources, both within the Agency and by other organisations. The list of initiatives in this chapter is not meant to be comprehensive, but aims to provide a good understanding of the relationship between CAMS and those plans, programmes and initiatives that have the greatest influence or dependency on them.

## 1. Environment Agency initiatives

### 1.1. Water Resource Strategies

The Agency published a national water resources strategy for England and Wales in March 2001. This provides the principles and a broad overview of the actions that we consider necessary to manage water resources over the next 25 years. It considers the needs for water, both of the environment and of society, and examines the uncertainties about future water demand and availability. It also provides a high-level assessment of resource availability and the amount of water needed for the environment over the next 25 years.

This strategy is part of a framework of integrated water resources planning employed by the Agency and water users. Water companies play an important part in this framework, each producing a published Water Resources Plan for the following 25 years. The strategy sets a structure within which these plans can be refined, allowing them to meet the wider objectives of society. The strategy for England and Wales sets the tone for and, in turn, is informed by, the Agency's Regional water resources strategies.

The Regional strategies, also published in March 2001, add local detail and provide further information that will help those involved in all aspects of water resources management to plan their activities.

The strategies contribute to CAMS by providing information on demands and the Agency's overall

vision for the management of water resources. CAMS, in turn, provide information to future Regional strategies about the availability of resources on a local scale and, alongside the Restoring Sustainable Abstraction programme, about pressures on the aquatic environment.

### 1.2. Restoring Sustainable Abstraction programme

The Agency's Restoring Sustainable Abstraction (RSA) programme covers the diversity of sites that are, or are suspected of being, adversely affected by abstraction. In many cases, their identification has come about through better understanding of the hydrological cycle and its relationship with habitats and species in recent years. The droughts of 1989-92 and 1995-97 highlighted this problem, leading to the publication of the National Rivers Authority's Top 40 low-flow sites in 1992, the Biodiversity Action Group's High and Dry report in 1996, and English Nature's SSSIs and Abstraction in 1999. In 1997, the Agency produced the National Environment Programme, outlined in A Price Worth Paying, a list of sites where it wanted to see improvement schemes for water quantity or water quality, funded through water company charges. With Government support, 118 water quantity schemes were included by the Director General of Water Services in his review of water prices for the period 2000-2005. In addition, the Agency is committed to reviewing all licences in areas designated under the Habitats and Birds Directives. This involves more than 400 Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) across England and Wales. The RSA programme aims to bring together these initiatives to ensure consistency of approach.

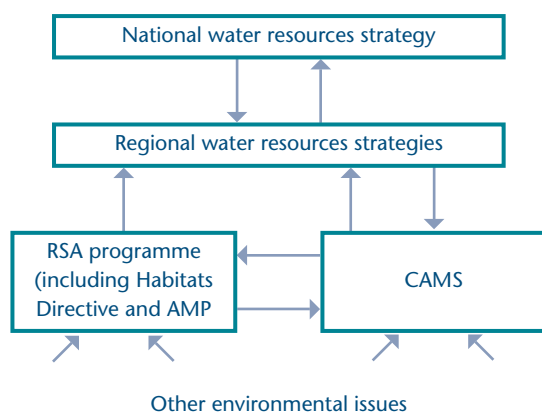
Information from the RSA programme is used in Regional water resources strategies and will also be included within CAMS. In time, new sites and proposed actions identified by CAMS will improve our knowledge of the extent of problems of over-abstraction around the country.

### 1.3. Local Environment Agency Plans

Since 1996, we have published 130 Local Environment Agency Plans (LEAPs) which now provide a large inventory of local environmental information, issues, and associated actions, with complete coverage across England and Wales. The plans were based on areas predominantly defined by natural catchment boundaries and took into account the views of local stakeholders, in both the information that they amassed, and the actions taken to resolve local issues.

In March 2002, an internal review of the LEAPs process was finalised. The Agency will now use the LEAPs inventory to continue to support local priorities, but will not produce any further LEAP documents.

The links between CAMS, Water Resources Strategies and the RSA Programme are illustrated in **Figure A1**.



**Figure A1** | Links between CAMS and related Agency initiatives

## 2. Other initiatives

### 2.1. Water company planning framework

Each water company has the statutory duty to maintain an efficient and economical system for water supply in its area. The Agency's duties in respect of water resources management do not relieve the companies of this obligation. Each company is expected by Government to produce a Water Resources Plan that sets out its proposals for maintaining the balance between supply and demand. Every five years, under the Periodic Review process, the Director General of Water Services reviews water companies' prices to customers. As part of this, the companies develop their Asset Management Plans (AMP), which may include proposals, agreed with the Agency, to tackle those abstractions and discharges that are damaging the environment. The National Environment Programme

(NEP) is one of investigations and actions on problem abstractions and discharges, nearly all of which was incorporated within the third Periodic Review (AMP3) from 2000 to 2005.

The CAMS process will supplement this water company planning framework by providing information on the availability of resources and the constraints on current and future abstractions.

### 2.2. Water Level Management Plans (WLMPs)

A Water Level Management Plan provides a formal written statement setting out the means by which the water level requirements for a range of activities in a particular area can be balanced and integrated. These areas are normally associated with low-lying land, characterised by managed drainage arrangements. The Agency, where it is the operating authority, liaises with English Nature, Internal Drainage Boards, conservation groups and others to prepare plans to ensure key water levels are safeguarded.

Any relevant Plans will be taken into account in the development of CAMS.

### 2.3. Biodiversity Action Plans

In response to the Rio Earth Summit in 1992, the UK government published Biodiversity: The UK Action Plan in January, 1994. In addition to the national plan for the conservation of biological diversity, there are Regional and County Biodiversity Action Plans (BAPs). For each designated species, a BAP has been or will be developed, outlining their requirements and any necessary actions. The Agency is responsible for taking a lead on many of these actions.

CAMS will take account of actions set out in these plans. If one has not yet been written for a particular BAP species or habitat that is present in the catchment, then the CAMS will use the best available knowledge to afford protection. This may involve an allocation of water to provide the necessary habitat.

### 2.4. Associated initiatives

Other initiatives that have interactions with CAMS include:

- Salmon Action Plans
- Fisheries Action Plans
- Drought Plans
- Catchment Flood Management Plans
- Regional and Local Development Plans
- County Biological Heritage Sites.

CAMS will take account of these initiatives.

## Annexe 2:

# The abstraction licensing system

## 1. UK legislation and statutory duties

The present licensing system for controlling water abstraction in England and Wales was introduced by the Water Resources Act 1963. Since then it has been a duty of the authorities responsible for water resources licensing to ensure that new water resources development does not cause river flows or groundwater levels to fall below those required to meet the needs of aquatic habitats and other water uses. Minor changes to the system were made in the Water Act 1989 and the whole process has since been consolidated in the Water Resources Act 1991, with some being further subsumed in the Environment Act 1995. However, the fundamentals have not changed.

The Agency's duties in managing water resources are:

- to conserve, redistribute, or otherwise augment water resources and secure their proper use;
- to have particular regard to the duties of water undertakers and sewerage undertakers.

Under the legislation, the Agency has powers to:

- grant, vary or refuse water abstraction and impoundment licences on application;
- revoke or vary existing licences;
- monitor and enforce abstraction and impoundment licence conditions.

The Agency also has general duties that it has to take into account when exercising any of its regulatory functions. These include:

- contributing to the achievement of sustainable development<sup>4</sup>;
- furthering the conservation and enhancement of natural beauty and the conservation of flora, fauna and geological or physiological features of special interest;

- taking account of effects on beauty and amenity of urban and rural areas;
- conserving the natural beauty, amenity, flora and fauna and the recreational use of waters<sup>5</sup>;
- having regard to the effect of proposals on the economic and social well-being of local communities in rural areas<sup>6</sup>;
- taking account of costs and benefits in the exercise of its functions.<sup>7</sup>

Successful management of water resources involves permitting abstraction to the extent necessary to meet abstractors' reasonable foreseeable needs whilst ensuring that the resource and its dependent ecosystem, together with existing protected rights and lawful uses, are properly safeguarded. Water is abstracted from rivers, canals and groundwater for a range of uses including public water supply, agriculture and industry. We balance the competing demands for water and the needs for the environment through the abstraction licensing system.

## 2. European Directives

### 2.1. Water Framework Directive

The Water Framework Directive<sup>8</sup> establishes a common framework for the protection and management of surface water and groundwater from the headwaters to the coasts. It will co-ordinate activities across the European Community to provide an integrated and consistent approach.

Implementation will require Member States to develop "River Basin Management Plans" as a high-level, statutory planning process, subject to public consultation and review on a six-year cycle. These plans will set out a programme of measures for achieving the environmental objectives of the Directive. As part of the Agency's function in achieving its implementation, CAMS will have a key role in contributing to the

<sup>4</sup> Environment Act 1995 s4

<sup>5</sup> Environment Act 1995 s6(1) and 7

<sup>6</sup> Environment Act 1995 s7(c)(iii)

<sup>7</sup> Environment Act 1995 s39

<sup>8</sup> EC Water Framework Directive 2000/60/EC

formulation and realisation of these plans. It is likely that each River Basin District will be made up of several CAMS areas.

These local building blocks will help to provide a solid foundation for delivering some of the river basin management actions required by the Directive. The Government will consult widely in the translation of the Water Framework Directive into practical action in England. The first stage in this extensive consultation was published in March 2001, in the form of a consultation paper published by the Department of the Environment, Transport and the Regions (DETR). There will be a second phase of consultation published by the Department for the Environment, Food and Rural Affairs (DEFRA) during 2002 followed by a third phase which is expected in 2003. In addition the Environment Agency published a technical consultation entitled '*Water Framework Directive – guiding principles on the technical requirements*' in July 2002.

## 2.2. Birds and Habitats Directives

The Conservation (Natural Habitats) Regulations 1994, which implement the Birds<sup>9</sup> and Habitats Directives<sup>10</sup> in the UK, aim to ensure the comprehensive conservation of natural habitats and fauna and flora on land and at sea, by ensuring the strict protection of specially designated sites. These sites are known as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) under the Habitats and Birds Directives respectively. Collectively these sites form a Europe-wide network known as "Natura 2000".

The Agency is a "competent" body under these Directives. This means that we must contribute to maintaining the favourable conservation status of those habitats that are afforded international protection and that may be affected by Agency authorisations, including abstraction licences. As a regulator, the Agency will properly screen and appraise all licence applications for the potential impact on SACs and SPAs and will adhere to the requirements of the Regulations to maximise environmental protection.

Where a CAMS area contains one of these sites, the development of the strategy will take account of the associated water requirements.

## 3. Water resources policies relevant to CAMS

Our primary duties are set down in legislation; policies describe the way that we fulfil these duties. The Environment Agency has developed a number of policies that inform the way we manage and plan water resources. Information on these policies is available from the Agency.

<sup>9</sup> EC Birds Directive 97/49/EC

<sup>10</sup> EC Habitats Directive 97/62/EC

<sup>11</sup> Water Resources Act 1991 s222(2) – note however Environment Act 1995 Schedule 21(2)(4), not yet implemented

## 4. The abstraction licensing process

### 4.1. Need for an abstraction licence

No one may abstract water from a source of supply without first obtaining a licence to do so from the Environment Agency. There are exemptions from this general requirement for the following purposes (Water Resources Act 1991, Sections 26-33):

- a) one-off abstraction not exceeding 5m<sup>3</sup>;
- b) one-off abstraction not exceeding 20m<sup>3</sup> subject to the consent of the Agency;
- c) domestic use from groundwater not exceeding 20m<sup>3</sup>/day;
- d) domestic and/or agricultural use (excluding spray irrigation) from an inland water contiguous to the occupier's land not exceeding 20m<sup>3</sup>/day;
- e) transfers between inland waters by a navigation, conservancy or harbour authority;
- f) de-watering of quarries, mines and other building/engineering works;
- g) any operation for the purposes of land drainage (including abstraction for irrigation other than spray irrigation);
- h) fire-fighting;
- i) use on vessels;
- j) abstractions for groundwater investigations subject to their being undertaken with the Agency's consent;
- k) sources of supply designated as exempt from licensing control by statutory instrument;
- l) use by or on behalf of the Crown or on Crown land<sup>11</sup>.

A licence is also required to impound water. Impounding licences are required for the construction or alteration of any works that impede or obstruct the flow of an inland water. There is an exemption where impounding works are constructed or altered for the purposes of a navigation, harbour or conservancy authority<sup>12</sup>.

### 4.2. Who can apply

An applicant for an abstraction licence must either be the occupier of the land at the point of abstraction or, in the case of surface waters and certain excavations into groundwater, have a right of access to the point of abstraction. In the case of occupation, evidence of negotiation to acquire the necessary rights will suffice<sup>13</sup>.

<sup>12</sup> Water Resources Act 1991 s26(2)

<sup>13</sup> Water Resources Act 1991 s35

In the case of waters owned or managed by British Waterways, applications for abstraction licences can only be made by British Waterways<sup>14</sup>, which then becomes the licence holder and is responsible for its due performance and operation. A third party (that is, non-British Waterways) abstractor can only take water from the canal system under separate contract with British Waterways. Those canals that are not managed by British Waterways are treated like any other water source and the applicant must therefore satisfy the normal criteria, subject to any agreement that may be necessary with the canal operator.

There is no pre-qualification for applying for an impounding licence.

### 4.3. Effect of a licence

A licence gives the holder a right to take water from the stated source for the purpose, at rates and subject to conditions specified, until it expires or the holder or the Agency revokes it. It provides protection against derogation resulting from the granting of any subsequent licence<sup>15</sup>, but does not guarantee that the quality of the water is suitable for its intended purpose nor that the amount licensed will always be available. It also provides a defence to any third-party action, except for negligence or breach of contract<sup>16</sup>.

### 4.4. Licence application process

The process of applying for and determination of licence applications is illustrated in **Figure A2**. The various stages are detailed opposite.

#### *i) Pre-application*

The licence application process is quite complex and involves the commitment of (sometimes significant) financial resources on the part of the applicant to properly formulate proposals, provide supporting information and give public notice.

To optimise the opportunity for eventual success, it is essential that the applicant possesses as much relevant information as possible before embarking on the formal process. There are two complementary ways in which this can be achieved:

- as CAMS are developed by the Agency, in consultation with local interests, the CAMS for the area will provide relevant information on the Agency's approach to the licensing of further abstraction in the catchment. Once a CAMS has been published for an area, a prospective applicant should consider his proposals in the context of the information contained in the CAMS;

- by direct contact with local Agency staff who will be able to advise on relevant local issues and provide guidance on matters specific to individual proposals.

There should always be preliminary contact with local Agency staff before commencing any formal licence application procedure so that:

- the application has the best possible chance of meeting the applicant's requirements;
- applicants are fully aware of the supporting information they will have to provide;
- applicants are fully aware of the constraints that may apply to their licence, once granted.

Once an outline proposal has been agreed in principle, the eventual success of an application will largely depend on the applicant providing all the information necessary to support the application. This will usually be in the form of an environmental assessment. Local Agency staff will be able to provide further advice on the scope of any environmental assessment required. In the case of some significant developments The Water Resources (Environmental Impact Assessment) Regulations 2001 may apply. Further guidance on these requirements can be obtained from the Agency.

In the case of proposals for the development of groundwater sources, the Agency will first require the proposed source to be constructed and tested for available yield and impact on surrounding sources and groundwaterdependent features before it can accept an application for the proposal. An analysis of the results of the pumping test should be provided and will form part of the environmental assessment. This preliminary stage of development has to be authorised by the Agency through the granting of a groundwater investigation consent (Water Resources Act 1991, Section 32). The process for obtaining such consent and undertaking the test is set out in the Agency's publication Groundwater Investigation Consents.

#### *ii) Formal application*

The procedure to be followed when making an application (Water Resources Act 1991, Section 37) is:

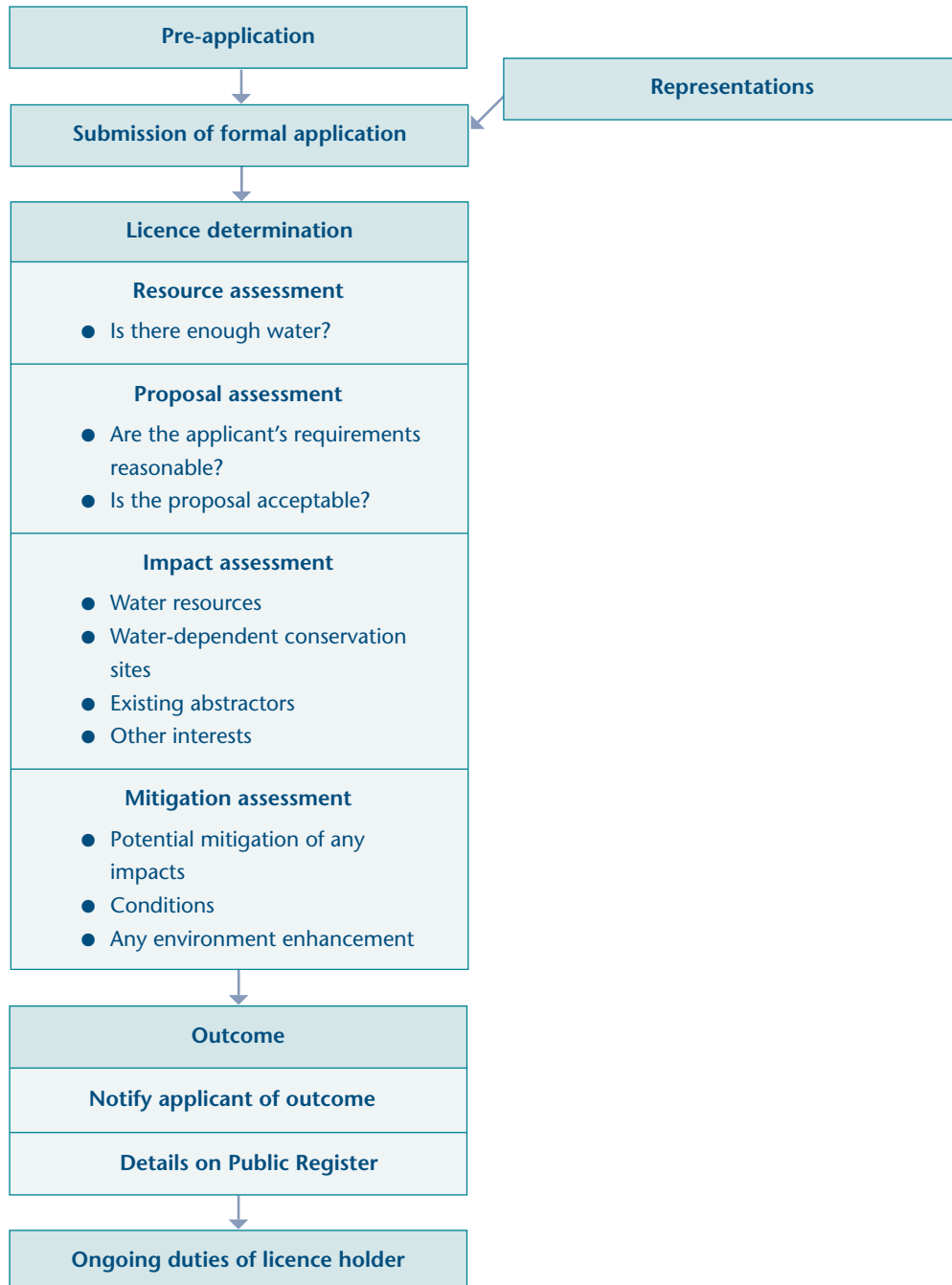
- a) The applicant must complete the appropriate Agency form, depending upon the type of licence required.
- b) A notice, in a prescribed form, must be published in one issue of the London Gazette and in each of two successive weeks in a local newspaper. The dates of publication have to be carefully co-ordinated.

<sup>14</sup> Water Resources Act 1991 s66(2)

<sup>15</sup> Water Resources Act 1991 s39(3)

<sup>16</sup> Water Resources Act 1991 s48(2,3,4)

Figure A2 | Licence application process



- c) Notice must be served on the local water undertaker and, in relevant cases, any navigation, conservancy or harbour authority and any internal drainage board having responsibilities at the point of abstraction.
- d) The application and accompanying reports, maps and the like must be placed on deposit at a convenient location for inspection by any interested person for a period of 28 days.
- e) If the application is for a quantity less than 20 m<sup>3</sup>/day, the Agency may, at its discretion, dispense with the requirement to advertise and serve notices.
- f) The application, accompanying reports and evidence of publication in the local press, where required, is then submitted to the Agency.
- g) The Agency will check and acknowledge the application, giving a date (three months after receipt of a valid application) by which the application should be determined or when the applicant may appeal to the Secretary of State if a decision has not been given (Water Resources Act 1991, Section 43).
- h) Where the Agency requires more time to determine the application, it may seek to agree with the applicant an extension to the three-month period.

Further information on the procedure for applying for a licence can be found in the Agency's publication *Abstraction Licensing and Water Resources – Guide for Potential Abstractors*, available from local Agency offices.

### **iii) Determination of the application by the Agency**

In considering an application for a licence, and in addition to the duties mentioned in chapter 1 above, the Agency must take into account a number of factors (Water Resources Act 1991, Sections 37-40). It must:

- not grant a licence so as to derogate existing protected rights to abstract, except with the consent of the holder of those rights;
- have regard to the requirements of lawful uses of water abstracted from groundwater;
- in relation to any relevant inland water, have regard for any minimum acceptable flow (MAF) that has been set or, if no MAF has been set, the criteria that would be used, namely:
  - the flow of water in the inland water from time to time;

- the character of the inland water and its surroundings in the light of the general environmental duties of the Environment Agency under the 1991 Act;
- any water quality objectives established under the 1991 Act in relation to the inland water or any other inland water that may be affected by the flow in the inland water in question;
- the need for safeguarding public health;
- the requirements of existing lawful users;
- the requirements of navigation, fisheries and land drainage;
- have regard to any written representations received in response to the advertising and notification procedures outlined in (ii) above;
- have regard to the requirements of the applicant, so far as they appear reasonable. This is interpreted as ensuring that the quantities applied for are consistent with the efficient use of water for the intended purpose. No value judgement is made as to the relative merits (whether in social, economic or environmental terms) of one water use as against another. Part of this includes an assessment of the efficiency of water use within the process that the licence will authorise.

The Agency considers the application, the supporting information and environmental reports at two levels:

- the immediate and direct impacts of the proposed abstraction on the surrounding environment and adjacent sources. Where a proposal may have an impact on an SSSI, SAC or SPA the Agency will consult English Nature or the Countryside Council for Wales. Where alleviation measures are required, it is the applicant's responsibility to investigate and fund these to the satisfaction of the Agency.
- the general availability of resources within the catchment or water management unit concerned.

### **iv) Outcome of determination**

The Agency has the power to grant a licence, grant it subject to such conditions as it considers appropriate or to refuse to grant a licence. The Agency will notify the applicant of its decision and must give reasons for any departure, that is to say any imposition of conditions or refusal, from the original application. An applicant who is dissatisfied with the outcome of the application will be notified of his right of appeal to the Secretary of State against any condition he considers unreasonable or against refusal of the application.

### **Licence conditions**

The licence is required to specify the holder of the licence, details of the location, authorised quantities, period of use, method of measurement and assessment of quantities abstracted. Except for licences for supply to third parties, the purpose of use and the land on which the water is authorised to be used, is also stated. Licences may also include any special conditions considered appropriate to protect the aquatic environment, other users and ensure proper management of water resources.

**Time limit** – All new licences and variations (other than downward variations or other similar minor variation having no environmental impact) will have a time limit imposed. For details of the Agency's policy on time limiting, see chapter 5 (page 28).

**Hands-off flow or level conditions** – To protect low flows and levels it is normal Agency practice to apply a flow or level constraint to new or varied abstraction licences, principally those authorising abstraction from surface waters. This entails the cessation or reduction of abstraction when a particular flow or level in the source or nearby monitoring point is reached. Wherever possible, river flow or level-related conditions are specified in relation to monitoring arrangements at an Agency flow gauging station or monitoring point. In other circumstances the applicant may be required to install and maintain an appropriate measuring device.

**Metering** – All significant abstractions must be measured by an appropriate meter or other suitable device.

**Return of water after use** – In some instances the return requirements after use will be specified to limit the net loss of water from the source.

**Water quality** – Where the abstraction may have an impact on water quality (for example, groundwater abstraction may cause movement of pollutants or allow saline intrusion in coastal areas), quality parameters may be defined leading to a reduction or cessation in abstraction.

**Monitoring requirements** – Special monitoring provisions may be included to protect a water-dependent environment nearby from potential effects of the abstraction or to provide further information on the effects of the abstraction.

### **Public Register**

Once an application is received, details are held on a Public Register available for inspection at local Agency offices. The Agency's decision, details of any licence granted and of any other person who succeeds to the licence are also included on the register.

### **v) Ongoing duties of the applicant**

#### **Data returns on abstracted volumes**

The Agency has powers to require any person who abstracts water to provide information on the abstraction (Water Resources Act 1991, Section 201). For most significant abstractions, licence holders are required to complete returns that document the amount of water used, whether measured by a meter or other appropriate means. Meters and the returns of abstracted volumes are required because they:

- show that the abstractor is operating within the licensed limits;
- help to monitor resource uptake;
- help the abstractor to ensure maximum efficiency.

The frequency of submission of these returns depends on the quantity of abstraction and varies between a daily record submitted monthly, and a monthly record submitted annually.

#### **Abstraction charges**

Annual abstraction charges are applied to all licences (Environment Act 1995, Section 41) with the exception of those:

- for power generation where the installed capacity is 5MW or less;
- those not exceeding 20m<sup>3</sup>/day for agricultural purposes (other than spray irrigation) from groundwater.

Licence charges are determined by reference to the Agency's Scheme of Abstraction Charges and are normally based on the annual quantity authorised by the licence. In the case of spray irrigation, however, there is provision whereby the licence charges may be levied partly (50 per cent) on the actual quantity abstracted and partly (50 per cent) on the annual authorised quantity.

The charge calculation is dependent on water use, the source of the water and the time of year it is taken. Weighting factors (WF) for each category are applied as illustrated in **Table A1** overleaf.

The income from abstraction charges funds all of the Agency's water resources management activities, including measurement, licensing, operational management and resource protection.

Further information on abstraction charges can be found in the Agency's leaflet Abstraction Charges, published annually.

**Table A1** | Weighting factors for abstraction charges

Loss factor	WF	Time of year	WF	Source type	WF
High loss, e.g. spray irrigation	1.0	All year	1.0	Unsupported	1.0
Medium loss, e.g. water supply	0.6	Summer	1.6	Supported	3.0
Low loss, e.g. mineral washing	0.03	Winter	0.16	Tidal	0.2
Very low loss, e.g. fish farming	0.003				

“Supported” watercourses incur a higher charge because of works undertaken and costs incurred by the Agency to provide support at times of low flow.

## 5. Enforcement policy

The Agency has a policy to inspect abstractions and impoundments to ensure that they are operated within the terms of the licence. A risk-based approach to licence inspection is taken, the frequency of inspection depending upon the criticality of the impact of the authorised activity on the environment. Meter inspections are an integral part of licence enforcement.

Appropriate enforcement action, in accordance with our Enforcement and Prosecution Policy, will be taken if licence holders do not comply with the conditions of their licence. The Agency has four levels of follow-up action, which are applied according to the severity of the infringement:

- site warning
- warning letter
- formal caution
- prosecution.

When assessing the level of follow-up action required, the Agency considers the circumstances surrounding the incident, such as the environmental impact, attitude of the offender and the specific offence involved.

## 6. Licence succession arrangements

The arrangements by which a licence passes from one holder to another are set out in the legislation<sup>17</sup> and in detailed regulations<sup>18</sup>. Licences, other than those for public or private water supplies, are required to define the land on which the water is to be used. This is conventionally done by means of a map attached to the licence. These licences can transfer to a new holder, either wholly or partly, and without any change to the location, purpose or conditions, as a result of any change to the occupation of the land defined on the licence. When any of that land changes occupation, the incoming occupier has certain rights relating to the licence. If all of the land is taken, the licence automatically transfers to the new occupier, subject to notice being given to the Agency within 15 months. If only a part of the land is acquired, the new occupier is entitled to apply for an apportionment with any other new occupiers to other parts of the land, or with the original licence holder where some of the land is being retained. In the latter case, the existing licence holder has some discretion over the process. The regulations governing these apportioned changes are quite complex and advice should be sought from a legal advisor or from the Agency. However, the overriding principle is that the terms and conditions of all licences arising from licence succession transactions are exactly the same as those of the original licence.

<sup>17</sup> Water Resources Act 1991 s49 and 50

<sup>18</sup> The Water Resources (Succession to Licences) Regulations 1969

For licences where land is not defined, as for public or private water supply licences, there are no corresponding regulations. Licences belonging to statutory water undertakings can be transferred between undertakings by transfer schemes made under powers in the Water Industry Act 1991. For private water supply licences, the Agency will normally allow a “succession” to a new owner, occupier or person taking over responsibility for the supply, where the circumstances are otherwise comparable to those governed by the regulations for licences with defined land attached.

If a licence acquired in this way requires any change to the details of the licence so that the new holder can use it in a different way, say for a different purpose, a full application to the Agency for a variation to the licence is required. The normal considerations applying to licence determination then apply.

## 7. Licence variations

A licence may be varied, either on the application of the licence holder or by the Agency.

An application to vary a licence made by the licence holder is generally subject to the same requirements, such as for advertising the proposals, submission of supporting information and the like, as for a new application. An exception to this is where the application is limited to reducing the quantities authorised for abstraction, which is not subject to the requirement to advertise and give notice. The Agency has the same duties in dealing with such an application as it has when dealing with a new one. We therefore consider the impact of the whole abstraction on the environment and the available resource and may impose conditions accordingly.

Where the Agency considers that a licence requires modification, say to reduce its impact on the environment, we have the power to make proposals for an appropriate variation (or for a complete revocation) of the licence. In this case the Agency has to undertake the publicity and notification requirements and must also serve notice on the licence holder. If the licence holder objects to the proposals the matter is then referred to the Secretary of State to decide whether the variation (or revocation) should go ahead. Where the Secretary of State confirms the proposed change, the licence holder may be entitled to compensation, where loss or damage can be shown. If the licence holder and the Agency fail to agree the amount of compensation, the matter is resolved by the Lands Tribunal. Where a licence is revoked by the Agency in this way on the

grounds that it has not been used during the preceding seven years, no compensation is payable.

## 8. Drought management

Droughts are natural events. In the absence of significant rainfall, groundwater levels, spring discharges and river flows fall. The Agency cannot stop droughts occurring, but it can help to manage them. We recognise that competition for water resources, even during times of exceptional drought, requires a balanced approach towards water supply, environmental and other interests.

It is our own needs and demands for water that we must manage during droughts. The Agency expects water companies and other abstractors to plan and manage their need for water within the constraints of their abstraction licences. In severe drought situations, however, the legislation recognises that water companies may temporarily need to abstract outside the terms of their licences. Provision under the legislation for the issue of drought orders and drought permits, forms of temporary authorisation to alter the existing abstraction regime, allow needs for water to be met under exceptional circumstances.

The Agency expects water companies to develop and agree Drought Contingency Plans that confirm measures such as demand reduction to be taken during a drought as well as any need for drought orders or permits. Our policies on such authorisations require water companies to:

- demonstrate that reasonable measures have been taken to reduce demand;
- take action when or where least environmental damage will occur, for example in the winter;
- locate sites for additional water where as little as possible environmental damage will occur;
- include measures within their plans to mitigate the most serious impact.

Abstractions for spray irrigation purposes are treated differently to other abstractions. Spray irrigation, if not from a reservoir filled in winter, can represent a very significant demand on rivers when they are extremely low. The Act therefore gives us powers<sup>19</sup> to impose a temporary restriction on spray irrigators if there has been an exceptional shortage of rain. Initially farmers are asked to voluntarily reduce their abstractions in areas most at risk, but if monitoring of surface and groundwater continues to show low levels we will impose formal restrictions. Total bans can also be instigated as a last resort.

<sup>19</sup> Water Resources Act 1991 s57

## 9. Proposals to change the licensing system

In November 2000, the Government published its consultation on a draft Water Bill<sup>20</sup>, which includes provisions to give effect to those decisions in Taking Water Responsibly requiring new legislation. The proposals will be taken forward in a final Bill when Parliamentary time permits. Subject to the will of Parliament, the new legislation will make the following changes to the licensing system:

- establish two new forms of licences – transfer licences, to authorise circumstances where water is transferred between sources of supply without intervening use, and temporary licences, to authorise short-term abstraction (less than 28 days);
- remove the current exemptions from the need for a licence for de-watering abstractions, land drainage augmentation transfers, navigation transfers and trickle (and other forms of) irrigation;
- establish 20m<sup>3</sup>/day as the normal threshold at or below which a licence is not required for any purpose;
- provide powers for the Agency to obtain an order varying the 20m<sup>3</sup>/day threshold in defined areas;
- provide powers for the Agency to establish registers of exempt abstractors in defined areas, entry onto which establishes protected right status for the abstraction;
- limit the pre-qualification for making an application for an abstraction licence to a right of access only;
- simplify the public notice requirements in certain cases;
- require all new licences to be time-limited;
- remove the requirement that new licences must state the land on which water is authorised to be used;
- allow licences to be transferred by agreement between the parties concerned;
- establish a new right of action for damages against holders of abstraction licences whose abstraction causes loss or damage to another person;
- reduce the period after which the Agency may revoke an abstraction licence for non-use, without payment of compensation, from seven to four years;
- enable the Agency to recover compensation costs from a single abstractor if another licence is revoked at the direction of the Secretary of State in favour of the first;
- remove from 15 July 2012 the entitlement of the holder of a permanent licence to compensation for the revocation of that licence at the direction of the Secretary of State on the grounds that the abstraction is causing significant environmental damage;
- give powers to the Agency to enter into enforceable water management arrangements with licence holders and recover costs;
- give the Agency additional enforcement powers to deal with breaches of licence conditions;
- allow the Agency to propose that one water company seeks a bulk supply from another;
- create a duty for all water companies to agree publicly available drought plans with the Agency;
- provide additional powers for the Agency to require information from abstractors on how water is used;
- place water companies under an enforceable duty to further water conservation.

<sup>20</sup>Water Bill – Consultation on draft legislation. DETR (November 2000)

# Glossary

## **Abstraction**

The removal of water from any source, either permanently or temporarily

## **Abstraction licence**

The authorisation granted by the Environment Agency to allow the removal of water from a source

## **Aquifer**

A permeable geological stratum or formation that is capable of both storing and transmitting water in significant amounts

## **Artificial recharge**

The filling or recharging of an aquifer by means other than natural infiltration of precipitation and run-off

## **Baseflow**

That part of the river flow that is sustained from groundwater sources rather than surface run-off

## **Biodiversity**

Diversity of biological life; the number of species present

## **Catchment**

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

## **Derogation**

The abstraction of water, or obstruction of flow of any such waters, which prevents a person entitled to a protected right from abstracting water to the extent authorised on their licence

## **Discharge**

The release of substances (water, effluent and the like) into surface waters

## **Drought**

A general term for prolonged periods of below-average rainfall resulting in low river flows and/or low recharge to groundwater, imposing significant strain on water resources and potentially the environment

## **Drought Order**

A means whereby water companies and/or the Environment Agency can apply to the Secretary of State for the imposition of restrictions in the uses of water, or which allows for the abstraction of water outside of existing licence conditions, in times of exceptional shortage of rainfall

## **Drought Permit**

The mechanism by which the Environment Agency (with the consent of the local navigation authority, if applicable) permits a water company to abstract water outside of the normal terms of an abstraction licence, in times of exceptional shortage of rainfall

## **Effluent**

Liquid waste from industrial, agricultural or sewage plants

## **Environmental allocation**

The amount of water that is required to support the ecology of a river

## **Gauging station**

A site where the flow of a river is measured

## **Groundwater**

Refers to all subsurface water, as distinct from surface water. Generally groundwater is considered to be that water that is below the zone of saturation and contained within porous soil or rock stratum (aquifer)

## **Hands-off flow**

A condition attached to abstraction licences such that if the flow in the river falls below that specified on the licence, then the abstractor may be required to stop or reduce the abstraction

## **Hands-off level**

A condition attached to abstraction licences such that if the water level in the river falls below that specified on the licence, then the abstractor may be required to stop or reduce the abstraction

## **Hydrology**

The study of water on and below the earth's surface

## **Hydrogeology**

The study of the quality, quantity, storage and movement of water in rock and the interaction of geology

## **Hydrometry**

The measurement of water in the environment

## **Internal Drainage Board (IDB)**

A local land drainage authority with powers to raise finance and undertake works

### **Impoundment**

A dam, weir or other work constructed in an inland water, whereby flows are obstructed or impeded, or water levels are raised above their natural position, and any works for diverting flows in an inland water associated with the construction of a dam, weir or other work

### **Minimum Acceptable Flow (MAF)**

The minimum acceptable flow as defined in Section 21 of the Water Resources Act 1991

### **Natural flow regime**

The river flow pattern experienced before the influence of man, with no abstraction from or discharge to the catchment

### **NRA**

National Rivers Authority, now incorporated within the Environment Agency

### **Precipitation**

Deposition of moisture including dew, hail, rain, sleet and snow

### **Protected Right**

An existing right to abstract that is protected from derogation by the granting of a new licence (unless the holder of the right gives consent to such derogation). Protected rights include all existing licensed abstractions, and certain exempt abstractions for domestic and agricultural purposes (excluding spray irrigation) not exceeding 20m<sup>3</sup>/day

### **Recharge**

Water that percolates downward from the surface into underground strata to replenish the groundwater resource

### **Saline intrusion**

The movement of salt water into an aquifer, from sea or estuary, due to groundwater depression, normally caused by excessive groundwater abstraction

### **Spray irrigation**

The irrigation of land or plants (including seeds) by water emerging from apparatus designed or adapted to eject water into the air in the form of jets or spray

### **Spring**

These occur where the water table intersects the ground surface

### **Surface water**

A general term used to describe all the water features such as rivers, streams, springs, ponds, lakes, reservoirs and canals

### **Surface water catchment**

The land that drains, whether naturally or artificially, to any point in a specified stream or river

### **Sustainable development**

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs

### **Topography**

Physical features of a geographical area

### **Trickle irrigation**

The watering of crops by slow release of small amounts of water through holes in pipes laid on the ground

### **Water resource management unit (WRMU)**

An area that has similar groundwater and/or surface water characteristics and is managed in a similar way

### **Wetland**

An area of low-lying land where the water table is at or near the surface most of the time, leading to characteristic habitats

Table of acronyms

Acronym	In Full
CAMS	Catchment Abstraction Management Strategies
RSA	Restoring Sustainable Abstraction (Programme)
SSSI	Site of Special Scientific Interest
SPA	Special Protection Area
SAC	Special Area of Conservation
DEFRA	Department of the Environment Food and Rural Affairs
DETR	Department of the Environment, Transport and the Regions
LEAP	Local Environment Agency Plan
EU	European Union
NEP	National Environment Programme
AMP	Asset Management Plan
WLMP	Water Level Management Plan
CBD	Convention on Biological Diversity
BAP	Biodiversity Action Plan
AEG	Area Environment Group
MAF	Minimum Acceptable Flow
WFD	Water Framework Directive

# Changes

The following chapters have been updated in the July 2002 publication of *Managing Water Abstraction – The Catchment Abstraction Management Strategy process*:

- Chapter 1 Introduction
- Chapter 2
  - Section 2.3 Definition of CAMS areas
  - Section 2.6 Resource availability status
  - Section 2.7 Sustainability appraisal
- Chapter 3 The CAMS process
  - Section 3.2 Sustainability appraisal
  - Section 3.3 Consultation
  - Section 3.4 CAMS documents
  - Section 3.5 Implementation and evaluation
- Annexe 1 Links between CAMS and other initiatives
- Annexe 2 The abstraction licensing system



## CONTACTS:

### ENVIRONMENT AGENCY HEAD OFFICE

Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS32 4UD  
Tel: 01454 624 400 Fax: 01454 624 409

[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)  
[www.environment-agency.wales.gov.uk](http://www.environment-agency.wales.gov.uk)

### ENVIRONMENT AGENCY REGIONAL OFFICES

#### ANGLIAN

Kingfisher House  
Goldhay Way  
Orton Goldhay  
Peterborough PE2 5ZR  
Tel: 01733 371 811  
Fax: 01733 231 840

#### SOUTHERN

Guildbourne House  
Chatsworth Road  
Worthing  
West Sussex BN11 1LD  
Tel: 01903 832 000  
Fax: 01903 821 832

#### MIDLANDS

Sapphire East  
550 Streetsbrook Road  
Solihull B91 1QT  
Tel: 0121 711 2324  
Fax: 0121 711 5824

#### SOUTH WEST

Manley House  
Kestrel Way  
Exeter EX2 7LQ  
Tel: 01392 444 000  
Fax: 01392 444 238

#### NORTH EAST

Rivers House  
21 Park Square South  
Leeds LS1 2QG  
Tel: 0113 244 0191  
Fax: 0113 246 1889

#### THAMES

Kings Meadow House  
Kings Meadow Road  
Reading RG1 8DQ  
Tel: 0118 953 5000  
Fax: 0118 950 0388

#### NORTH WEST

PO Box 12  
Richard Fairclough House  
Knutsford Road  
Warrington WA4 1HG  
Tel: 01925 653 999  
Fax: 01925 415 961

#### WALES

Rivers House/Plas-yr-Afon  
St Mellons Business Park  
Fortran Road  
St Mellons  
Cardiff CF3 0EY  
Tel: 029 2077 0088  
Fax: 029 2079 8555



ENVIRONMENT AGENCY  
GENERAL ENQUIRY LINE

**0845 9 333 111**

ENVIRONMENT AGENCY  
F L O O D L I N E

**0845 988 1188**

ENVIRONMENT AGENCY  
EMERGENCY HOTLINE

**0800 80 70 60**



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[www.environment-agency.gov.uk/cams](http://www.environment-agency.gov.uk/cams)

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