

Contents

	Executive Summary	5
1.0	Introduction	
1.1	Background	9
1.2	Aims and Objectives	11
1.3	Steering Group	11

Figures	
Figure 1.1: Gatwick Sub-regional Strategy Area	10
Figure 2.1: The Water Cycle	13
Figure 2.2: Water Cycle Study Stages	14
Figure 4.1: The Study Area including River Catchments	33
Figure 4.2: Licensed Abstraction in the Adur and Ouse CAMS area	39
Figure 4.3: Licensed abstraction in the Arun and Western Streams CAMS area	41
Figure 4.4: Licensed abstraction in the Upper Mole CAMS area	42

Appendices

Appendix 1: Data Catalogue

Executive Summary

Background

The Regional Spatial Strategy (RSS) for the South East of England, the South East Plan, sets out the long term spatial planning framework for the south east region from 2006 to 2026. The South East Plan, hereafter referred to as 'the SEP', identifies Gatwick and its surroundings as one of nine sub-regional centres which will be the focus for growth and regeneration over the next 20 years. Policy GAT3 of the SEP requires the delivery of 36,000 new homes in the Gatwick Sub-region by 2026, the majority of which should be in the form of major developments 'at, or adjoining Crawley'.

This required growth will substantially increase the demand for water, necessitating additional water resources, water abstraction and treatment. Further development will also require additional infrastructure for water supply and for wastewater treatment and disposal, as well as for surface water drainage and flood risk alleviation. This stress is recognised under Policy GAT3, which states that housing provision 'at Crawley' must be informed by the findings of a Water Cycle Study.

In order to ensure that any planned development does not have a negative impact on the existing water environment, Crawley Borough Council (CBC), Horsham District Council (HDC), Mid Sussex District Council (MSDC) and Reigate and Banstead District Council (RBBC) wish to jointly commission an Outline Water Cycle Study to inform their emerging Core Strategies.

Water Cycle Study

A Water Cycle Study is the process of assessing environmental capacity and determining the most sustainable water infrastructure service solutions. It identifies possible tensions between growth proposals and environmental constraints and establishes the type of sustainable water infrastructure required to deliver growth. In doing so the Study establishes at what point infrastructure is required and how it is to be delivered and funded, the study then sets out solutions through which these tensions can be addressed.

The production of a Water Cycle Study is normally a broken down into three stages, the first of which is the Initial Scoping Study

Study Progression

The sub-regional authorities (CBC, HDC, MSDC, RBBC) have agreed that the Water Cycle Study should be progressed on a joint-authority, sub-regional (Gatwick Diamond) basis, with Crawley Borough Council acting as lead authority. This position has been

1.0 Introduction

1.1 Background

The Regional Spatial Strategy (RSS) for the South East of England, the South East Plan, sets out the long term spatial planning framework for the south east region from 2006 to 2026. The South East Plan, hereafter referred to as 'the SEP', identifies Gatwick and its surroundings as one of nine sub-regional centres which will be the focus for growth and regeneration over the next 20 years. The 'Gatwick Sub-Regional Strategy Area' identified in the SEP extends north from Gatwick Airport to the edge of Redhill, east to East Grinstead, south to Burgess Hill and Haywards Heath and west to Horsham as shown in Figure 1.1. In order to support the economic performance of this area, Policy GAT3 of the SEP requires the delivery of 36,000 new homes in the area by 2026, the majority of which should be in the form of major developments at, or adjoining Crawley.

This required growth will substantially increase the demand for water necessitating additional water resources, water abstraction and treatment. Further development will also require additional infrastructure for water supply and for wastewater treatment and disposal which is already constrained in Crawley, as well as for surface water drainage and flood risk alleviation. In order to ensure the development does not have a negative impact on the existing water environment, Policy GAT 3 of the SEP states that 'provision levels at Crawley will need to be

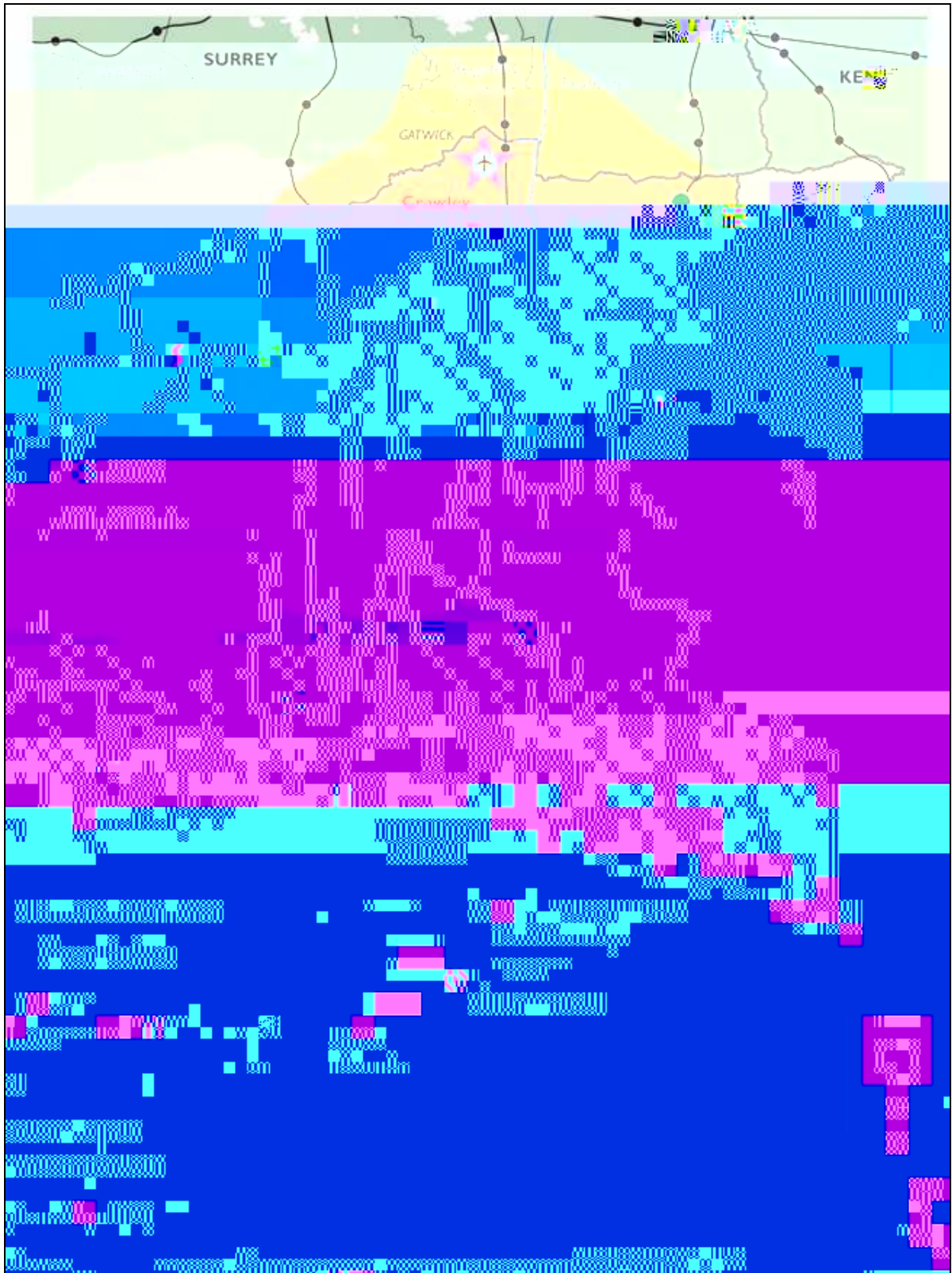


Figure 1.1: Gatwick Sub-regional Strategy Area

2.0 Gatwick Sub-Regional Water Cycle Study

2.1 The Water Cycle

The water cycle or hydrologic cycle as it is also k

Finally, unless managed, over development can have a negative impact on surface water drainage flows, which can in turn, result in surface water flooding. If coupled with an increase in hard-standing, which reduces infiltration rates, this impact can be significantly greater.

All of these impacts can indirectly effect the ecol

STAGE 1: Scoping Study

3.0 Policy and Development Context

3.1 Gatwick Sub-Regional Study Area

As identified in Section 1, the Gatwick sub-region, as identified in the SEP, encompasses the administrative areas of six local authorities, CBC, HDC, MSDC, RBBC and Mole Valley and Tandridge District Councils. Policy GAT3 of the SEP sets out that a total of 36,000 new homes will be required during the year 2006 to 2026, with each local authority is required to deliver a specific quantum of housing development.

3.3 Planning Policy and Guidance

Water Act 2003	National	Revises the manner in which water abstraction and impoundment is regulated, specifically aiming to improve the protection of the environment and provide greater regulatory flexibility.
Making Space for Water (2004)	National	Published for consultation in April 2004, the Making Space for Water programme sets out the Government's strategy for achieving holistic flood and coastal erosion management in England.
Code for Sustainable Homes	National	The Code for Sustainable Homes was published in December 2006 with the aim of providing a step change in sustainable home building practice. The Government is currently encouraging the Code's use on a voluntary basis, though it will eventually become the single national standard by which the sustainability of new homes is to be assessed and will form the basis of future updates of the Building Regulations. The Code measures the sustainability of a home against design categories, of which water sustainability, surface-water run-off, waste, pollution and biodiversity are of particular relevance to this study.

3.3.2 Regional Policy and Guidance

South East Plan

The SEP, published in May 2009, is the RSS for the south east of England. The document sets out the long-term spatial planning framework for the region over the years 2006-2026 and is the key driver guiding development in the Gatwick sub-region over the plan period.

In a Gatwick context, one of the central objectives of the SEP is to maximise the potential for sustainable sub-regional economic growth whilst maintaining and enhancing the character, distinctiveness, sense of place and important features of the sub-region. Policy GAT1 identifies that this should be achieved by sustaining and enhancing the pivotal role played by Crawley-Gatwick in the sub-region and wider economy, in particular through recognising and sustaining

Policy NRM1: Sustainable Water Resources and Groundwater Quality – Seeks to maintain and enhance water supply and ground water through avoiding adverse effects of development on the environment. The Policy places particular emphasis upon the achievement of the Water Framework Directive (WFD) through ensuring the delivery of the actions set out in River Basin Management Plans (RBMPs).

Significantly, the policy identifies that new development should be directed to areas of sufficient water supply and outlines that where sufficient water infrastructure to support proposed development is not available, development should be phased to allow time for the relevant water infrastructure to be put in place.

Policy NRM2: Water Quality – Sets out the requirement to maintain and enhance water quality through avoiding adverse effects of development on the water environment. Particular emphasis is placed upon the need to take account of a comprehensive information base including water cycle studies, groundwater vulnerability maps, groundwater source protection zones and Asset Management Plans (AMP). Local planning authorities are also required to work alongside water and sewerage infrastructure providers and the EA to ensure that sufficient infrastructure is in place to meet demand and that impacts of treated sewage discharges do not breach environmental quality standards or 'no deterioration' objectives.

Policy NRM3: Strategic Water Resources Development – Identifies the need for new water resource schemes and increased demand management over the plan period to cater for current and future development needs. No new strategic water resource options are proposed in the WCS area during the plan period.

Policy NRM4: Sustainable Flood Risk Management – Relays the requirements of PPS25 and outlines the need for local authorities, in conjunction with the EA, to take account of RBMPs, Catchment Flood Management Plans and Surface Water Management Plans in developing local development documents and other strategies.

3.3.3 Local Policy and Guidance

Local Authority Planning - Local Development Frameworks

The LDF comprises a suite of planning documents intended to set out the spatial vision and policies to guide development within, the administrative area of a local authority. The sub-regional authorities are currently at different stages in the LDF production process and a brief outline of each authority's current position is outlined below.

3.4 Current / Potential Strategic Allocations

3.4.1 Strategic Housing Sites

In order to meet the SEP requirement to provide 36,

Table 3.4 – Current/Potential Sub-Regional Strategic Housing Allocations

Site	Council	Yield	Status	Comments
North East Sector	Crawley	1,900*	Allocated	*Following a planning inquiry held in June 2009, the Secretary of State has issued an interim decision indicating that the appeal will be allowed. A formal decision is to be issued in 2010. Should the appeal be allowed, the Council will consider whether the yield of this site should be increased. It should be noted that the Core Strategy allocates this site for 2,500 dwellings.
Town Centre North	Crawley	800**	Allocated	**The Core Strategy identifies that TCN will provide 800 residential dwellings, though this figure is under review as part of the Core Strategy Review.
Haslett Avenue (Former Leisure Centre)	Crawley	784	Permitted, under construction	
Lucerne Drive	Crawley	107	Permitted, under construction	
Ifield Community College	Crawley	170	Allocated	
Thomas Bennett	Crawley	200	Allocated	
Dorsten Square	Crawley	160	Allocated	
Haslett Avenue/Telford Place	Crawley	312	Allocated	
Three Bridges Corridor	Crawley	n/a	Designated in Core Strategy. Identified in SHLAA	

Crawley College Site	Crawley	100	Identified in SHLAA	
Crawley Hospital	Crawley	110	Identified in SHLAA	
West Sussex County Council Professional Centre	Crawley	80 (with potential for greater density)	Identified in SHLAA	
West of Ifield	Crawley	2,500	Identified in SHLAA	
West of Crawley	Horsham	2,500	Allocated through Pol	

Land between Gravelye Lane and Scamps Hill, Lindfield	Mid Sussex	Potential capacity for 528 dwellings	Not allocated**	identified are subject to change as this document progresses.
North / North West of Burgess Hill : 'Northern Arc'	Mid Sussex	Potential capacity for 3,800 dwellings	Not allocated**	
Land West of East Grinstead	Mid Sussex	Potential capacity for 570 dwellings	Not allocated**	
Broad Location to the North West of Haywards Heath	Mid Sussex	Potential capacity for 300 dwellings	Not allocated**	
Crabbet Park	Mid Sussex	Potential capacity for 2,300 dwellings	Not allocated**	
Keymer Brick and Tileworks, Burgess Hill	Mid Sussex	475 dwellings	Allocated, outline permission granted	
Bolnore Village: Phases 4 and 5	Mid Sussex	685 dwellings	Allocated, outline permission granted on appeal	
Horley North East Sector	Reigate and Banstead	710	Under construction	First of three phases underway
Horley North West Sector	Reigate and Banstead	1510	Permitted, under construction	Section 106 to be finalised by April 2010. First completions expected in 2010/15
Horley Town Centre	Reigate and Banstead	255	Allocated	Housing delivered through several mixed use development schemes

Table 3.4 – Current/Potential Sub-Regional Strategic Housing Allocation

North Horsham (Chennells Brook)

Horsham

121 hectares

Not allocated*

is being undertaken to ascertain whether these site

4.0 Water Cycle: Environment, Infrastructure, Constraints and Recommendations

4.1 Introduction

4.4 Rivers

There are three main river catchments (along with their tributaries) within the study area, The Adur & Ouse Catchment; the Arun & Western Streams Catchment and the Upper Mole Catchment. These catchments are illustrated in Figure 4:

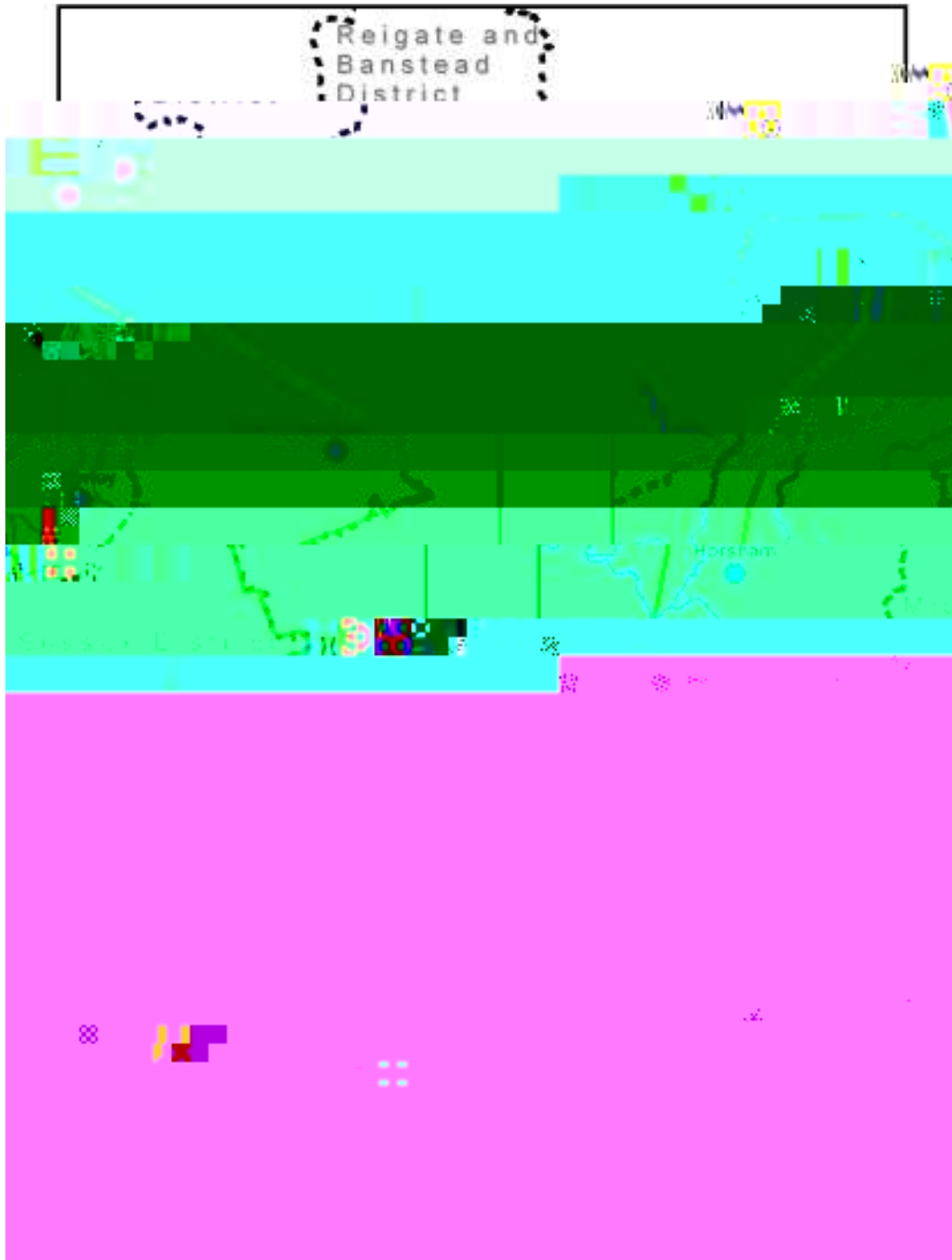


Figure 4.1: Map of Study Area Including River Catchments (Source: EA Main River Centrelines)

Adur and Ouse Catchment

The upper and western branch of the River Adur flows south within the south-eastern portion of Horsham District. A further tributary meets the Adur north of Henfield, with its source on the eastern boundaries of Burgess Hill within Mid Sussex District. The Adur is highly 'flashy', responding quickly to rainfall events and having low summer flows. This is predominantly due to the impermeable Weald Clay, which underlies most of the catchment. The catchment also contains the Brighton Chalk, a major aquifer unit. The Adur is fed by perennial springs emanating from the northern scarp slope of the Brighton Chalk. This can provide a limited quantity of baseflow to some tributaries of the river.

4.5 Water Supply

The study area is supplied by three water companies, as follows:

District/Borough	Water Supply Provider
Crawley Borough	Southern Water
Horsham District	Southern Water
Mid Sussex District (south of East Grinstead)	South East Water & Southern Water (Pyecombe area only)
Mid Sussex District (north of East Grinstead)	South East Water
Reigate & Banstead Borough	Sutton & East Surrey Water

Information on Water Supply can be found in each water providers WRMP. There are three WRMPs relevant to the study area:

Southern Water - Water Resource Management Plan

Southern Water is responsible for water supply in Crawley Borough, Horsham District and the Pyecombe area of Mid Sussex. It also provides wastewater treatment for much of the Horsham District and the area of Mid Sussex south of East Grinstead. In order to best direct the provision of water in the region, Southern Water apply a 'twin-track' approach to management. This is centred on the parallel objectives of reducing water demand through demand management (for example, metering, reducing leakage and encouraging water efficiency) and also through ensuring sufficient supply via the development of new sources, inter-zonal transfers, or inter-company bulk supplies as required. This approach is developed in Southern Water's WRMP October 2009, which sets out how the company propose to ensure that a sufficient supply of

North WRZ, the Water Resources Strategy identifies the following requirements for the AMP5 period;

- A policy of universal metering throughout the area by 2015;
- The optimisation of inter-zonal transfers from the Sussex Worthing WRZ to Sussex North WRZ;
- The renewal of the existing bulk supply contract from Portsmouth Water to Sussex North WRZ;
- Asset improvement schemes for groundwater sources (0.30 MI/d peak, 0.10 MI/d average);
- The development of a new surface water source enabled by abstraction from the tidal stretch of the River Arun (South of Pulborough), with an associated small raw water storage reservoir and pumping and pipework infrastructure to link with the existing water supply works at Hardham. A separate scheme would involve the upgrading of the existing water main between Hardham and Stopham. Planning consent and the abstraction licence have been granted and it is anticipated that the source will be commissioned by 2012.

In order to ensure that an element of flexibility is incorporated into the Water Resources Strategy for the Central Sub-Regional area, sensitivity analysis has been undertaken to consider a 'worst-case' scenario that could worsen the supply demand

Both options – winter storage and regional transfers, would maintain the supply-demand balance in Resource Zone 2 and Resource Zone 3 through to the end of the 25 year planning period. Further work will be required during AMP5 to assess these options, as well as alternatives. (Source: South East Water draft WRMP, 2010). As of October 2009, the main reservoir in the area, Ardingly, was 95% full.

Sutton & East Surrey Water - Water Resource Management Plan (February 2009)

Sutton and East Surrey (SESW) supplies water to households and businesses within three London Boroughs, five Boroughs within Surrey and the Boroughs of Sevenoaks in Kent and Crawley in Sussex. There are two Water Resource Zones (WRZs) within the supply area, the Sutton WRZ and East Surrey WRZ. Approximately 85% of the Company's water is supplied from groundwater sources within three separate aquifer units:

- North Downs Chalk;
- Mole Valley Chalk; and
- Lower Greensand.

SESW also operates one surface water source at Reservoir A, supplied by a pumped river abstraction.

SESW supplies water to approximately 275,000 properties, of which approximately 23% are currently measured. The majority of water supplied by the SESW is for domestic household consumption which increases significantly during dry summer periods, resulting in peaking factors of up to 1.5 for unconstrained demand.

The Company has sufficient resource to meet average demands but a deficit in resources to meet peak demands (in a dry year). The Company's WRMP identifies a twin track approach to meeting growth in demand. The twin track approach relies upon demand management to control growth in demand from both new and existing properties. Sutton and East Surrey's demand management programme includes leakage control, pressure management, replacement of mains, metering and promoting customer awareness of the need to use water wisely. In addition, the Company proposes to increase the capacity of its Bough Beech treatment works and to make network improvements, which together with the proposed demand management measures, will enable it to overcome its existing peak resource deficit and to meet peak and average demands till 2035.

4.5.1 Potential Constraints to Development and Recommendations

It is evident that many areas of the south east are currently under significant levels of water stress, a situation that is reflected in the respective WRMPs of the three water supply companies serving the Study Area, which each identify a water supply/demand balance deficit during the AMP5 period. Whilst a shortage of water supply would represent a constraint to development over the plan period, the water suppliers remain confident that this risk can be appropriately managed through the twin-track approach to ensure that sufficient water capacity is available to serve the quantum of development identified in the South East Plan. As such, it is not currently anticipated that water supply should act as a constraint to development in the study area over the plan period to 2026, though it is recommended that this position should be reviewed in detail

4.6 Water Resource Management and Abstractions

The following section provides an overview of the c

Three WRMUs identified within the Adur and Ouse (A&O)CAMS are relevant to the study area. The River Adur WRMU (WRMU2) covers the southern half of Horsham and the southern half of Mid Sussex (the majority of the District south of Haywards Heath). The River Ouse WRMU (WRMU1) covers the rest of Mid Sussex, apart from a very small section which is covered by the Cockhaise Brook WRMU (WRMU3) to the north of Haywards Heath.

WRMU1 (River Ouse) – Water Available

WRMU1 is assessed at two APs, one of which (Sakeham) is within the study area. The WRMU is rural in character with little resource demand aside from public supply. The river is naturally 'flashy' and due to the impermeable geology, surface water flows dominate. Large discharge from the Goddards Green Wastewater Treatment Works (WwTW) mean significantly enhanced summer flows on the eastern branch, which is in excess of abstraction levels from this reach. The western branch has very little abstraction, with natural river flows ensuring there is an excess of water required by the environment.

WRMU2 (River Adur) – No Water Available

WRMU2 is assessed at seven APs, of which only one (Ardingly AP) is within the study area. It is predominantly a rural catchment, although does contain the main town of Haywards Heath and other small villages within the study area and beyond.

The river's hydrological regime is dominated by a large public water supply abstraction operated by South East Water, if anr ytMMNf D600P-//xfoD8-/xHMEf/E/ffDE/fpD68P-0HP0fID/x/E/frD60-///PEQfaD8-/x/E/fcD6H

tDP-//NE/fuD8-/x/-EE// L/an sue Dtd

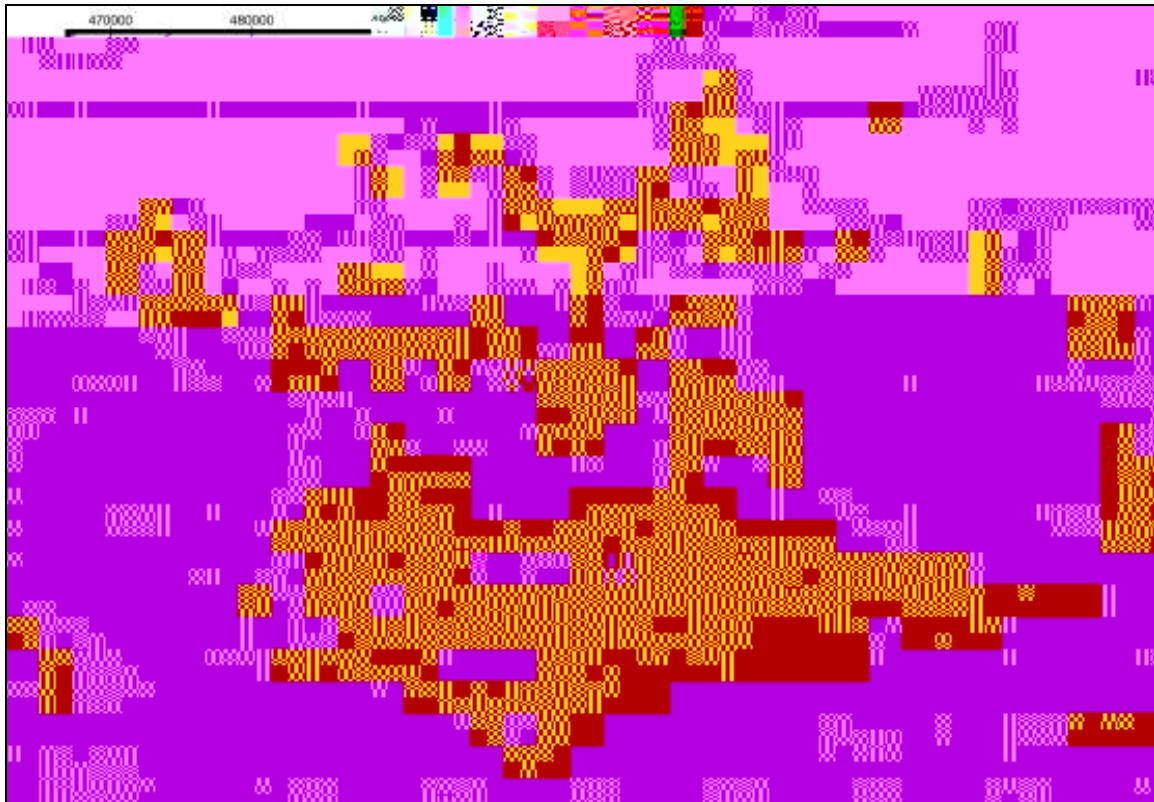


Figure 4.3: Licensed abstraction in the A&WS CAMS Area (Source: Environment Agency Arun and Western Streams Catchment Abstraction Management Strategy, 2003)

Two major aquifers, the Chalk and Lower Greensand underlie much of the A&WS (A&WS) CAMS area. These aquifers represent the areas most important water resource providing numerous springs and streams which support surface water flows and feed internationally important sites such as the Arun Valley Special Protection Area (SPA) and Ramsar Site.

Although the area suffered from significant flooding in 1993/94 and 2000/01, pressure from new development and rising demand from householders is increasing the need for water. The EA believed resources are already finely balanced within the A&WS CAMS area to meet the demands of existing abstractions and the need to protect river flows to meet environmental requirements. The EA is therefore against any further abstraction from the Chalk and Lower Greensand aquifers and from rivers during the summer months. (Source: A&WS CAMS, 2003)

The Arun and Western Streams (A&WS) CAMS covers a wide area in which only one WRMU, the Upper Arun WRMU (WRMU1) is relevant to the study area.

Mole Catchment

WRMU2 (Middle Mole and Upper Mole) – No Water Available

The Upper Mole Catchment, relevant to the northern part of the study area, is identified by the Mole CAMS as falling within WRMU2, Middle Mole and Upper Mole. The Middle and Upper Mole WRMU drains the urbanised areas of Crawley, Dorking and Horley and contains seven Sewage Treatment Works (WwTW). These can serve to enhance flows, particularly during summer

4.7 Wastewater Treatment and Collection

Southern Water and Thames Water are responsible for

Horsham

the area known as Crabbet Park, which has been subject to investigation through the Core Strategy as a potential location for strategic development in the period up to 2026.

Information obtained from Thames Water in a continued dialogue regarding Crabbet Park, combined with the findings of the 'At Crawley' study, indicate that the current sewerage infrastructure in this location is not sufficient to be able to cope with the planned growth in the 'At Crawley' area. It is considered that there is insufficient sewerage capacity planned to deliver more than one further new neighbourhood in this area and as the North East Sector (within Crawley BC) is now likely to gain planning permission following appeal (the inspector has been 'minded to approve' this scheme) there is more certainty that this location will come forward before Crabbet Park. It is therefore sensible to suggest that Crabbet Park should only be considered as a longer-term option for strategic development, from 2021 onwards, in order for necessary sewerage infrastructure to be planned for and in place. Alth

An overall objective to achieve 'Good' ecological potential by 2027 is set, with the RBMP observing that to achieve this status by 2015 would be technically infeasible and disproportionately expensive. High levels of Ammonia and moderate levels of Phosphate are identified, along with poor (uncertain) levels of Dissolved Oxygen.

Stanford Brook, Tilgate Brook, Gatwick Stream and Crawters Brook at Crawley are currently identified as being at a 'Moderate' overall ecological potential. An overall objective to achieve 'Good' ecological potential by 2027 is set, with the RBMP observing that to achieve this status by 2015 would for Stanford Brook be technically infeasible and would be disproportionately expensive for Stanford Brook, Tilgate Brook, Gatwick Stream and Crawters Brook. Ammonia and Phosphate levels are considered 'Good' and Dissolved Oxygen levels are High.

Baldhorns Brook (southern section of Upper Mole) and Salfords Stream (Salfords to River Mole confluence) is currently identified as being at a 'Poor' overall ecological potential. An overall objective to achieve 'Good' ecological potential by 2027 is set, with the RBMP observing that to achieve this status by 2015 would be technically infeasible for Baldhorns Brook and disproportionately expensive and technically infeasible for Salfords Stream.

Burstow Stream is currently identified as 'bad' for its ecological potential, with the objective to achieve 'good' by 2027. To achieve this by 2015 would be technically infeasible.

South East River Basin Management Plan (Adur and Ouse & Arun and Western Streams F5468563-EFAP8

Water quality is perhaps the most significant environmental constraint against development in the Horsham District. The 2006 EA report, 'Water Quality and Growth in the South East'9 examined the likely effect that increasing flows of effluent (resulting from an increase in house numbers) would have on river quality downstream of the associated WwTW. The report found that the River Arun was under significant pressure from discharges from the Horsham WwTW and recommended that development be limited to 3,800 new houses beyond that already connected.

This issue is likely to be worsened as a result of the implementation of the Habitats Directive and the EA limiting the concentration of phosphate permitted to be discharged from WwTWs. There is also concern that there is only limited technology available to meet the standards required.

Meeting future water quality objectives is dependant on sufficient flows being available in rivers and streams and as such an increase in abstraction to enable future development may have a negative impact on water quality downstream.

Groundwater monitoring has also highlighted increasing trends in nitrate in the Lower Greensand aquifer. Protection of groundwater is important within this catchment due to the number of public water supply abstractions taken from aquifers in this area. Localised pollution of the aquifer has also been cause by oil and agricultural pollutants and the impact of this in terms of supplying new development with clean would need to be investigated in future stages of the WCS.

The EA has a groundwater protection policy designed to protect areas of Chalk feeding water supply abstractions. If public water supply sources are affected by pollution, alternative sources

4.9 Ecology and Biodiversity

The study area and its immediate surroundings are home to a diverse range of wildlife and habitats, including internationally, nationally and locally important sites and allocations, some of which are afforded special protection. Not all of these sites are dependant upon the water environment, though those linked into the river catchment system can potentially be affected by a number of water-related impacts that are associated with development pressure. Such Impacts include;

Over-abstraction¹⁰: Abstraction of groundwater for domestic, agricultural or industrial uses may reduce watercourse flow rates to such levels that the physical form of the river channel and the habitats it supports is threatened. It may also lead to the 'drying-out' of ponds and marshlands during warmer periods which can affect fish spawning and the establishment of submerged plants. Siltation can then smother wildlife further and infill features with coarse gravels;

Flood Risk: Development which does not give adequate consideration to surface water drainage, may result in flash floods down stream during periods of intense rainfall, again this may impact the physical structure of the river banks; and

Water Quality: The maintenance of good water and sediment quality is essential to maintaining a

In addition to the SSSIs listed above, there are also two water dominant SSSI's downstream of the study area which may be impacted by future development within the Gatwick diamond sub-region. These include the Upper Arun SSSI comprising the stretch of the River Arun adjacent to Adversane, Horsham and the Arun Banks SSSI, a fen, marsh and swamp lowland area located north of Arundel.

In addition to these statutory designated sites, the study area also contains non-statutory wildlife sites known as Sites of Nature Conservation Importance (SNCI). These sites are designated by LPA for their considerable wildlife value. A number of these sites are recognised specifically for their aquatic features, of particular note are Leechpool and Owlneech Wood, Warnham Mill Pond, Horsham and Old Deer Park, A further three water dominant SNCI's which are outside the study area but may still be influenced by future development include; Middle Barn Farm Meadow, Pulborough and the Wye and Arun Canal, River Arun Adjacent meadows.

The internationally protected Arun Valley SPA

The Thames River Basin Management Plan identifies high levels of Phosphate and Ammonia in several rivers within the Mole Catchment, nutrients that can result in excessive plant growth that negatively affects wildlife. The clay characteristics of the Upper Mole Catchment can result in low levels of dissolved oxygen in canalised and shaded reaches during times of low flow, which can again impact negatively upon wildlife. A number of rivers within the Mole Catchment have been identified as Heavily Modified Water Bodies (HMWB), either through culverting or in-stream structure installation, an approach which can negatively impact on habitat diversity and fish migration patterns. For the study area, HMWB's include the lower Gatwick Stream, Ifield Brook and the northern section of the Upper Mole. Within the part of the Upper Mole Catchment falling within the study area, the majority of water bodies are considered to be of a 'Moderate' Ecological Status, with the exception of the section of Baldhorns Brook, where Ecological Status is 'Poor'.

Adur and Ouse Catchment Area

There are four SSSIs within or adjacent to the Adur and Ouse catchment within the study area boundary. One SSSI, Ditchling Common, lies to the eastern boundary of Burgess Hill. Although this is located outside of the boundary for this Scoping Study and outside of West Sussex, it has been highlighted through MSDCs draft Core Strategy (and accompanying Sustainability

5.0 Moving Forward

Section 4.0 of this Scoping Study outlines the current baseline with respect to the water environment and water infrastructure. The level of development that each of the Local Authorities involved in this study are required to deliver will impact upon the water environment and section 4.0 highlights areas of concern. In particular, the availability and quality of water supply and issues surrounding present and planned sewerage and wastewater treatment capacity in order to cope with an increased supply of housing, raise issues that will need to be investigated further.

It is therefore the view of the stakeholders involved in preparing this Scoping Study that an Outline Study should be undertaken.

5.1 Content of the Outline Study

The Outline Study will build upon the findings of the Scoping Stage by considering, in more detail, the effects of planned new development on the water cycle environment and water infrastructure in relation to where growth is to be targeted.

A number of potential constraints to development have been highlighted throughout Section 4 of this Report, the Outline Study should therefore investigate these potential constraints in more detail, specifically addressing the following points:

General

Provide recommendations as to where further investigation will be required to inform the progress strategic of site allocations; and

Assess the impact of climate change on the water cycle in the study area, including consideration of the impact any increase in flooding could have u

Water Resources & Supply

Confirm whether adequate water supply can be maintained through the twin track approach of promoting water efficiency and the bulk transfer of resources from other areas. In assessing the above, regard should be afforded to the availability of water resources within neighbouring areas and their spare capacity;

Investigate the availability of water resources throughout the sub-region, particularly in relation to the potential strategic sites and within a context of development phasing;

Having regard to the sub-regional authorities' late

The findings from an Outline Study will also determine the progression of this Water Cycle Study.

