



# SURREY LOCAL FLOOD RISK MANAGEMENT STRATEGY 2017-2032

**Surrey County Council as  
Lead Local Flood Authority  
in partnership with**

**The Surrey Flood Risk Partnership Board**



**SURREY**

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# SUMMARY

This Strategy has been produced to inform individuals, communities and businesses of the steps Surrey County Council (SCC) and its partners are taking to manage the impact of flooding in Surrey.

Flooding from rivers, ground and surface water poses a high risk in parts of the County and such incidents can have a great human and financial cost. SCC and its partners recognise this and are committed to doing what they can to reduce these impacts. However, it is important to understand that flooding is a natural occurrence. While SCC and its partners will work hard to reduce the risk of flooding and its impact, flooding cannot be prevented entirely.

The best way to tackle this issue is to support residents and businesses to be prepared and resilient and to support flood alleviation work where it is appropriate. As we saw in Surrey in 2013/14, it is an incredibly stressful and upsetting experience to suffer the consequences of flooding. But through careful preparation, education and working in partnership, the impacts of flooding can be managed as effectively as possible.

SCC and its partners aim to do this by investing in natural and engineered flood alleviation schemes, influencing policy where possible and supporting residents in a variety of ways. This will be challenging as Local Authorities have limited financial resources and multiple competing priorities. However, we are confident that this Strategy sets a strong foundation for the County Council and its partners to effectively manage and respond to the impacts of flooding.



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# INTRODUCTION

## Context

Surrey is a County at high risk of flooding with in excess of 30,000 properties at risk from fluvial and surface water sources. It has experienced several major flood incidents in the last ten years, with much of this occurring in the floodplain of the lower River Thames and its tributaries. There are also many localised areas prone to surface and ground water flooding or the emergence of groundwater.

[The Flood and Water Management Act \(2010\)](#) (FWMA) places a number of responsibilities on SCC in relation to flood risk. It designates SCC as Lead Local Flood Authority (LLFA) and outlines a number of roles that the Council must undertake. One of these is the duty to develop, maintain, apply and monitor a strategy for local flood risk management in its area. This document is that Strategy.

## Roles and Responsibilities

It is not SCC alone that is responsible for the management of flood risk - it is important to note that multiple organisations and individuals also have roles to play in the alleviation of flooding. The Environment Agency (EA) has strategic oversight for national flood risk management and is responsible for managing the risk of flooding from main rivers and the sea. SCC, in its capacity as LLFA, has responsibility for managing the risk of flooding from ordinary watercourses, surface water and ground water. Borough and District Councils also have powers to manage ordinary watercourses, while water companies are responsible for managing their water and sewage systems. With varying, equally important responsibilities all parties will use this Strategy as a framework to effectively manage flood risk.

In Surrey these Risk Management Authorities (RMAs) have formed a partnership board to coordinate flood risk management activities. This board is known as the [Surrey Flood Risk Partnership Board \(SFRPB\)](#). The Board oversees cross-Authority flood work in the County and it has set the priorities outlined in this Strategy. Therefore, this document is owned by the SFRPB and is written from its perspective, with all of its members committed to achieving the agreed objectives. To this end, use of the term 'we' in the Strategy refers to all RMAs working in partnership.

Private landowners have responsibilities too – people who have a watercourse running through or adjacent to their land have [riparian duties](#) to maintain it. Residents should also take steps to protect their property from the risk of flooding, be this just knowing what to do in a flood event or installing property level protection, for example.

With this in mind, SCC publicly consulted on this Strategy to seek the views of everyone involved in the alleviation of flooding (see **Appendix G**). As a result of the feedback taken on board, this document aligns with the priorities of partners and residents.

## Supporting Joint Priorities

The Surrey Local Flood Risk Management Strategy (LFRMS) supports the wider ambitions of SCC. Its objectives play their part in delivering the Council's strategic goals of wellbeing, economic prosperity and resident experience. It also supports the Highways and Transport Service's Strategic Business Plan and Asset Management Strategy.

Most importantly, the LFRMS recognises the needs of residents. The effective management of flood risk involves a two-way interaction between the authorities that manage flooding and the people that may suffer from its consequences. Working together and sharing information with one another is essential if the goal of reducing the impacts of flooding across the County is to be met. This Strategy sets out how this will be achieved.



## Why a Refreshed Flood Risk Management Strategy?

A LFRMS for Surrey was first published in December 2014. Since that time the landscape of local flood risk management has changed. These changes include:

- [Amendments to legislation](#) that have placed more responsibilities on RMAs
- Significant national and local flood events have required Local Authorities to learn lessons and adapt their approach to managing flood risk
- Increasing demand for new development has heightened the need to ensure that local drainage solutions are sustainable and do not increase the risk of flooding

These policy-led factors have partially driven the need for the LFRMS to adapt to the changing environment of flood risk management. However, the Strategy also needs to change in order to become a more accessible document. Feedback received following publication of the original LFRMS stated that it was too long, overly technical and did not clearly set out our objectives. In response to this we have made the refreshed Strategy much shorter, with our aims clearly set out in just ten pages and accompanying technical information contained in appendices.

A further change is a shift to a longer-term vision of 15 years. This is because effective flood risk management requires significant foresight – it often takes years to obtain funding for a scheme, design it, and then construct it. Furthermore, this long term approach better aligns with that of the planning and funding cycle for flood projects now followed by Central Government. The Strategy aims to be proactive as well as reactive, and a longer-term vision allows it to do this.

This document represents a change from the previous Strategy. However, it is a change that enables us to adapt to the moving landscape of flood risk management and to deliver an effective service to residents.



# THE LOCAL FLOOD RISK MANAGEMENT STRATEGY FOR SURREY

## Structure and content

Section 9 of the FWMA (2010) specifies what a LFRMS will contain. This includes objectives as to how flood risk will be managed, when these objectives will be achieved, and which authorities will help to achieve them. All requirements of the Act have been embedded within this Strategy.

The Strategy consists of four main elements:

- **Vision:** this is the main goal that will be achieved over the lifetime of the Strategy
- **Purpose:** this summarises who will be involved in achieving the Vision and why this is important
- **Principles:** these provide context for the Vision, and are important concepts that are considered as part of all of the objectives
- **Objectives:** these are the specific activities that will be undertaken to achieve the Vision

## Vision

This is the point upon which all of the objectives and principles of the Strategy are based. The Vision for Surrey is as follows:

*To make Surrey more resilient to flooding on a long-term basis through a co-ordinated approach with residents and partners*

## Purpose

The Purpose sets out why a Strategy has been written and who will play a part in achieving the Vision. The Purpose is as follows:

*All partners with flood risk management duties to work together effectively through the Surrey Flood Risk Partnership Board to mitigate the effects of flooding*

## Principles

The Strategy has seven principles which support the Vision. These set the context within which the Strategy has been developed and provide the foundation for delivering the objectives. They can be regarded as the core values of the Strategy, while the objectives specify what is going to be achieved.

- **A long-term vision:** we will reduce the impact of flooding in Surrey and future-proof project outcomes on a sustainable, long-term basis that considers the effect of climate change
- **A catchment-based approach:** we will use a holistic catchment-based approach to assess and manage the integrated flood risk within Surrey and upstream/downstream river catchments
- **Partnership working:** we will work in co-operation with partner risk management authorities to mitigate the risk of flooding in the County while achieving cross-cutting corporate goals
- **Community resilience:** we will empower communities to be more resilient to flooding by supporting them to reduce risk, recover from incidents more quickly and lessen the disruptive impacts of flooding
- **Enhancing growth and wellbeing:** we will ensure that efforts to reduce flood risk in Surrey enhance and protect the social, environmental and economic wellbeing of Surrey
- **Sustainable flood risk management through planning and development:** we will use the opportunities presented by new development and regeneration to make communities more resilient to flooding
- **Capital investment:** we will invest in flood alleviation schemes that reduce the risk of flooding to people, property and the natural environment where a robust business case indicates that this will provide value for money and that wider social, environmental and economic benefits will be achieved



## Objectives of the Strategy

The objectives provide detail around what specific actions will be undertaken in order to achieve the Vision. They are informed by the principles of the Strategy and set out what is going to be done in order to reduce flood risk for Surrey. These are tangible and are what success will be measured against.

Each of these objectives has an **action plan** detailing how it will be achieved, and each action has a timescale setting out when it will be delivered. These action plans can be found in **Annexe A** of the Strategy. Each objective also supports the risk based approach to flood risk management, which prioritises those communities at greatest risk as per the [National Flood and Coastal Erosion Risk Management Strategy](#).

The term 'we' in these objectives refers to all partner RMAs. The Strategy's action plans detail which specific organisations are responsible for working towards the delivery of each objective.

### Objective 1: Information

Our understanding of local and strategic flood risk will be improved through clear data management and sharing between risk management authorities to ensure partnership delivery of works to high risk areas.

***To achieve this we will:***

- a. Improve the use and quality of flood data to maximise the value it provides
- b. Collect and share flood data with partner RMAs and the public in an open and accessible way via annual reports to the SFRPB
- c. Improve the assessment of flood risk using data analysis and modelling to prioritise flood risk management activities

### Objective 2: Maintenance

Risk Management Authorities will reduce flood risk by delivering an effective maintenance regime for their drainage assets and managing their estates across the County in an environmentally sustainable manner.

***To achieve this we will:***

- a. Promote best practice approaches in delivering statutory maintenance duties with partner RMAs
- b. Improve and update records of our drainage assets
- c. Deliver an effective maintenance regime for RMA-owned assets
- d. Ensure maintenance of flood risk management assets is considered at design stage and that this is documented and implemented through an asset maintenance plan



### **Objective 3: Risk Management Authority Responsibility**

We will agree with partners who the Risk Management Authorities in Surrey are, jointly define their responsibilities and establish clear lines of communication with them to support the delivery of partnership-based flood alleviation projects.

***To achieve this we will:***

- a. Define the roles of RMAs with our partners and promote these to the public
- b. Develop a communications plan for strategic and operational communications between partners
- c. Review opportunities for future devolution of powers and budgets to RMAs

### **Objective 4: Landowner Responsibility**

Private owners will be made aware of their riparian responsibilities to maintain their drainage assets and watercourses. We will support, promote and enforce these responsibilities.

***To achieve this we will:***

- a. Develop our knowledge of riparian assets in high risk areas by recording these assets on a reactive basis
- b. Review and improve enforcement and consenting principles, policies and processes
- c. Promote consenting, enforcement processes and standards to the public, Members and RMAs, and encourage implementation of these on a community-wide basis

### **Objective 5: Resilience**

The residents and businesses of Surrey will be supported to improve community resilience. Local people will be empowered to reduce the risk of flooding on both an individual and community level.

***To achieve this we will:***

- a. Assess and prioritise flood action group locations and encourage communities to establish such groups in areas of need
- b. Develop and improve RMA engagement methods with flood action groups, including training and public facing information/materials
- c. Develop a governance structure for a County-wide forum for flood action groups
- d. Promote resilience planning as a core tool for community groups and support them with response and recovery following a flood event

## Objective 6: Planning

We will reduce the risk of flooding to and from development through local planning policy and processes.

***To achieve this we will:***

- a. Undertake a robust statutory consultee role on surface water drainage
- b. Influence policy and advise Local Planning Authorities on managing flood risk
- c. Take viable opportunities to utilise existing and new development to reduce flood risk
- d. Educate planning officers, Members and developers on flood risk and drainage, particularly SuDS and environmentally beneficial measures

## Objective 7: Investment

We will reduce flood risk from all sources via a programme of capital works, which will be integrated with the activities of other Risk Management Authorities.

***To achieve this we will:***

- a. Establish and implement best practice on integrating flood risk reduction into all feasible SCC capital highway schemes
- b. Establish and implement best practice for integrating flood risk reduction and water quality improvement into all feasible capital schemes across all RMAs via a single, joint capital programme
- c. Identify new funding sources and innovative methods for securing funding for flood alleviation schemes
- d. Ensure all drainage assets, where feasible, are retrofitted or replaced with SuDS to manage the quantity and quality of water in a more sustainable way

## Objective 8: Investigation

We will investigate significant flooding incidents in order to make recommendations that help to reduce flood risk.

***To achieve this we will:***

- a. Review our [Section 19](#) investigation procedures to maximise the efficiency of the process and the value gained from it
- b. Use new data obtained from Section 19 investigations to inform the prioritisation process for flood risk management or resilience works

For further details around the context of each objective and the steps that will be taken to achieve them, please refer to the Strategy's Action Plans (**Annexe A**).

# SURREY LOCAL FLOOD RISK MANAGEMENT STRATEGY

## **Appendices**



**SURREY**

# APPENDICES

## Purpose

The Surrey Local Flood Risk Management Strategy (LFRMS) has been split into several documents to aid navigation and ensure that the main Strategy document is concise and accessible. We want the Strategy to reach and empower all relevant stakeholders, enabling them to understand the future of flood risk management in Surrey and how they can help deliver the vision of the Strategy which is;

***To make Surrey more resilient to flooding on a long-term basis through a co-ordinated approach with residents and partners***

Therefore to facilitate a concise and focused Strategy, the appendices have been separated into this document for reference as appropriate. They provide context and background information to the Strategy and aim to answer any questions not covered by the main Strategy document.

The appendices support the Strategy and should not be referenced in isolation. References to each of the appendices can be found at the relevant location within the main Strategy document.

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## Glossary

The table below defines and explains some of the frequently used terminology within this document.

Acronym / Term	Definition	Acronym / Term	Definition
AA	Appropriate Assessment	LFRMS	Local Flood Risk Management Strategy – directs long-term FRM in Surrey.
AGLV	Area of Great Landscape Value	LLFA	Lead Local Flood Authority – responsible for managing flood risk from ordinary watercourses, surface water and groundwater.
ALC	Agricultural Land Classification	Local Flood Risk	Sources of flooding which are classed as 'local' include surface water, flooding from ordinary watercourses and groundwater. It is the responsibility of the LLFA to manage these.
AMS	Asset Management Strategy	LNR	Local Nature Reserve
AONB	Area of Outstanding Natural Beauty	LPA	Local Planning Authority
AQMA	Air Quality Management Area	MAGIC	Multi-Agency Geographic Information for the Countryside
AQS	Air Quality Strategy	Main River	Main rivers are usually larger streams and rivers, but some of them are smaller watercourses of



			local significance. Main Rivers indicate those watercourses for which the Environment Agency is the relevant risk management authority.
AWI	Ancient Woodland Inventory	MPA	Minerals Planning Authority
BAP	Biodiversity Action Plan	NAQS	National Air Quality Strategy
BC	Borough Council	NFCERMS	National Flood & Coastal Erosion Risk Management Strategy
Capital	Engineered infrastructure schemes which create a new asset, or change the existing asset.	NH3	Ammonia
CFMP	Catchment Flood Management Plan	NNR	National Nature Reserve
CO	Carbon monoxide	N2O	Nitrous oxide
CO2	Carbon dioxide	NO <sub>x</sub>	Nitrogen oxides
CPA	County Planning Authority	NO2	Nitrogen dioxide
DC	District Council	NPA	National Park Authority
DCLG	Department for Communities & Local Government	NPPF	National Planning Policy Framework (2012) – sets out the government's planning policies and how these are expected to be applied.
DCMS	Department for Culture, Media & Sport	Ordinary Watercourse	Ordinary Watercourses are displayed in the mapping as the detailed river network. An ordinary watercourse is any watercourse (excluding public sewers) that is not a Main River.
DEFRA	Department for Environment, Food and Rural Affairs	O3	Ozone
DfT	Department for Transport	OWC	Ordinary Water Course
DMC	Domestic Material Consumption	RMA	Risk Management Authority – organisations which have statutory duties under the Flood and Water Management Act (2010).
EA	Environment Agency – responsible for managing flood risk from main rivers, the sea and reservoirs.	PFCs	Perfluorocarbons
EHO	Environmental Health Office	PM10 & PM2.5	Particulate matter
EIA	Environmental Impact Assessment	PFRA	Preliminary Flood Risk Assessment
EPEHB	Economic Prosperity, Environment and Highways Board – acts as a select committee and consists of County Councillors who have an interest or expertise in transport or environmental issues. The Board makes recommendations to the County Council Cabinet.	RBMP	River Basin Management Plan
EPS	European Protected Species	RIGS	Regionally Important Geological Site
EqIA	Equality Impact Assessment – a process which seeks to ensure that the strategy does not discriminate against minorities or those who are disadvantaged or vulnerable.	SAC	Special Area of Conservation
ES	Environmental Statement	SCC	Surrey County Council – the LLFA for Surrey.
FCERM	Flood and Coastal Erosion Risk Management	SEA	Strategic Environmental Assessment

FDGiA	Flood Defence Grant in Aid – national funding for flood alleviation schemes.	SF6	Sulphur hexafluoride
FG	Flood Action Group – a community group dedicated to proactive FRM.	SFRA	Strategic Flood Risk Assessment
FRA	Flood Risk Assessment	SFRPB	Surrey Flood Risk Partnership Board – a local partnership that incorporates representation from all organisations in the County who have a role to play in flood risk management.
FRM	Flood Risk Management	SMP	Shoreline Management Plan
FWMA	Flood and Water Management Act (2010)	SNCI	Site of Nature Conservation Importance
GCR	Geological Conservation Review	SNR	Strategic Network Resilience team (within SCC and primarily responsible for coordinating the LLFA duties).
GHG	Greenhouse Gas	SO2	Sulphur dioxide
HAP	Habitat Action Plan	SPA	Special Protection Area
HCs	Hydrocarbons	SPZ	Source Protection Zone
HER	Historic Environment Record	SSSI	Site of Special Scientific Interest
HFCs	Hydrofluorocarbons	SuDS	Sustainable Drainage Systems – a less traditional approach to drainage where water is managed in a way which mimics nature, rather than conveying water quickly to watercourses via sewers. SuDS provide benefits such as reduced flood risk, and improved water quality and biodiversity.
HRA	Habitat Regulations Assessment	SWMP	Surface Water Management Plan
IDB	Internal Drainage Board – independent public bodies which are responsible for managing water levels in low-lying areas.	TDM	Transport Development Management
IROPI	Imperative reasons of overriding public interest	WB	Waterbody
JNCC	Joint Nature Conservation Committee	W&CA 1981	Wildlife & Countryside Act 1981 (as amended)
LA	Local Authority	WFD	Water Framework Directive
LBAP	Local Biodiversity Action Plan	WG	Surrey Flood Risk Partnership Board Working Group – supports the SFRPB and flood risk management through implementing board-agreed outputs.
LDA 1991	Land Drainage Act 1991	WPA	Waste Planning Authority

**If you have any queries about the appendices or the wider LFRMS, please get in touch by emailing [flooding.enquiries@surreycc.gov.uk](mailto:flooding.enquiries@surreycc.gov.uk)**

## Legislative Context

[The Flood Risk Regulations \(2009\)](#) designate the County Council as 'Lead Local Flood Authority' (LLFA) for its area. This designation means that the Council must provide strategic direction concerning the management of flood risk in Surrey.

However, the [Flood and Water Management Act \(2010\)](#) (FWMA) is the key piece of legislation underpinning the Local Flood Risk Management Strategy (LFRMS) as it is here where this strategic direction is defined.

### Flood and Water Management Act (2010)

The most relevant section of the FWMA to the Strategy is section 9, which sets out the need for an LLFA to develop a flood risk management strategy. Specifically:

*"A lead local flood authority for an area in England must develop, maintain, apply and monitor a strategy for local flood risk management in its area"*

Section 9 also states what this strategy must include:

*"The Strategy must specify:*

- a. The risk management authorities in the authority's area*
- b. The flood and coastal erosion risk management functions that may be exercised by those authorities in relation to the area*
- c. The objectives for managing local flood risk*
- d. The measures proposed to achieve those objectives*
- e. How and when the measures are expected to be implemented*
- f. The costs and benefits of those measures, and how they are to be paid for*
- g. The assessment of local flood risk for the purpose of the strategy*
- h. How and when the strategy is to be reviewed*
- i. How the strategy contributes to the achievement of wider environmental objectives"*

All of the above elements have been incorporated into this Strategy.

It is also worth noting that an amendment to the FWMA was made in 2014 through [Written Statement HCWS161](#), which established the process whereby Local Planning Authorities are statutorily obliged to consult with LLFAs on surface water drainage proposals for all new major developments. This responsibility is addressed in objective 6 of the Strategy.

Further details on the legal context surrounding the roles and responsibilities of a LLFA can be found in the FWMA.

### Other relevant legislation

Although the FWMA provides much of the context for the roles and responsibilities of an LLFA, there are numerous other pieces of legislation and reviews that are relevant to the day-to-day management of flood risk. These have been taken into account in the development of this Strategy and can also be viewed online:

- The Reservoirs Act (1975)
- The Ancient Monuments & Archaeological Areas Act (1979)
- The EU Wild Birds Directive (1979/409/EEC & 2009/147/EC)
- The Environment Act (1995)
- The Countryside & Rights of Way Act (2000)
- The EU Strategic Environmental Assessment Directive (2001/42/EC)

- The Highways Act (1980)
- The Wildlife & Countryside Act (1981)
- The Building Act (1984)
- The EU Environmental Impact Assessment Directive (1985/337/EEC & 1997/11/EC)
- The Environmental Protection Act (1990)
- The Town and County Planning Act (1990)
- The Planning (Listed Buildings & Conservation Areas) Act (1990)
- The Land Drainage Act (1991)
- The Water Resources Act (1991)
- The Water Industry Act (1991)
- The EU Habitats Directive (1992/43/EEC)
- The Water Act (2003)
- The Planning and Compulsory Purchase Act (2004)
- The Civil Contingencies Act (2004)
- The EU Floods Directive (2007/60/EC).
- The Pitt Review (2008)
- The Climate Change Act (2008)
- The Planning Act (2008)
- The Local Democracy, Economic Development & Construction Act 2009
- The Localism Act (2011)
- The National Flood and Coastal Erosion Risk Management Strategy for England (2011)

## Local Flood Risk Management Strategies within the national context

The sheer amount of legislation, policies and reviews that relate to flood risk management can be confusing. In order to understand where Surrey's LFRMS fits in the national context, we have produced the image below:

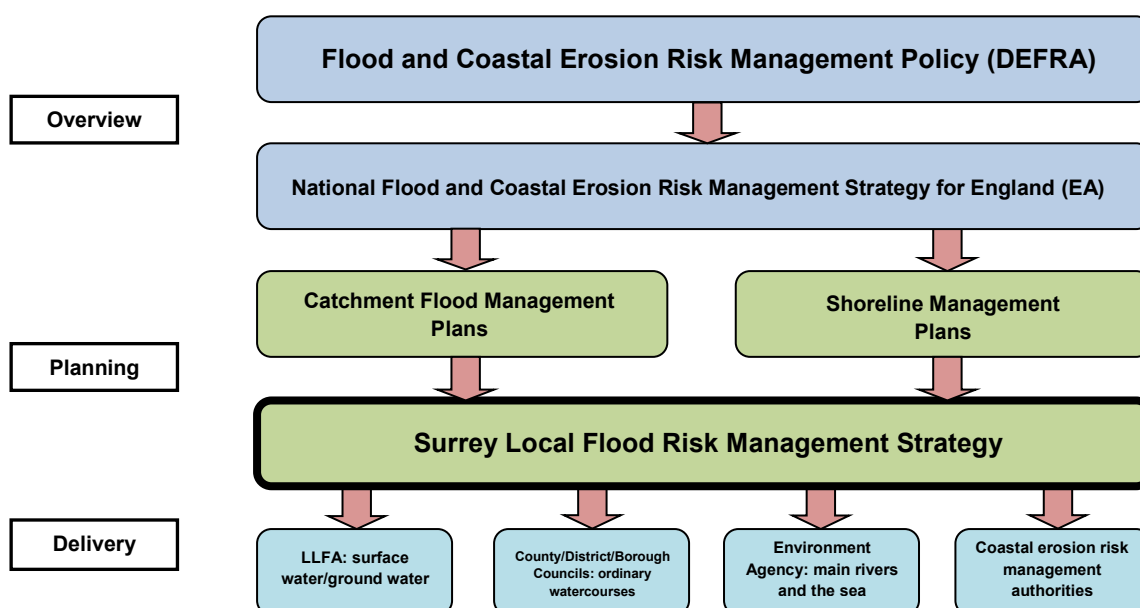


Fig. 1 - National flood risk management – policy overview



## Roles and Responsibilities of Risk Management Authorities in Surrey

The following annexe explains what a Risk Management Authority (RMA) is, outlines their responsibilities, and provides contact information for the relevant agencies.

### What is a Risk Management Authority?

A RMA is an authority that has a role to play in the management of flood risk. RMAs range from Central Government organisations to private companies and all have different responsibilities before, during and after a flood. It is useful to understand 'who does what' in the event that you need to contact someone regarding a flood-related issue. A summary of the different RMAs in Surrey and what they do is provided below.

### The Department for Environment, Food and Rural Affairs (DEFRA)

DEFRA are the Central Government Department with responsibility for developing national policies on flooding, including the Flood and Coastal Erosion Risk Management Policy. These national policies form the basis for the work of other Risk Management Authorities such as the Environment Agency and Local Authorities.

### Environment Agency (EA)

The EA are tasked by the [Flood and Water Management Act \(2010\)](#) to have a strategic overview role for all sources of flooding and coastal erosion risk management (FCERM). They also have responsibility for management of all Main Rivers and the coast. All Main Rivers are highlighted in the EA Flood Risk Maps, which can be found on their [website](#). The main responsibilities of the EA include:

- Developing long term approaches for FCERM, including creating Catchment Management plans to address flood risk in all river catchments
- Supervision of all matters relating to flood defences, including maintenance
- Issuing environmental permits for any alterations to Main Rivers or the flood plains of Main Rivers
- Issuing flood warnings

### Surrey County Council (SCC)

SCC has a number of responsibilities around flooding due to its role as Lead Local Flood Authority (LLFA) for Surrey. This means that as well as being the main highway authority, the Council also has risk management, enforcement and permissive management powers and responsibilities over Ordinary Watercourses (i.e. a watercourse not designated as a Main River), surface water and groundwater as well as Highways drainage (although this may come under Highways England responsibilities in some locations).

Other SCC responsibilities include:

- Maintaining a register of drainage assets and designating these if they have a significant impact on flood risk
- Consenting changes prior to riparian owners altering, removing or replacing any features or structures on Ordinary Watercourses, and undertaking enforcement if consents are not sought
- Acting as a statutory consultee on for surface water drainage proposals for all major developments in its area

- Investigating significant flooding events in Surrey
- Playing a lead role in Emergency Planning and management before, during and after a flood event

Further information around what duties SCC has in its capacity as LLFA can be found in the [Flood and Water Management Act \(2010\)](#).

### District and Borough Councils

District and Borough Councils are key partners to the LLFA in dealing with local flooding issues, having the same permissive powers and responsibilities over Ordinary Watercourses. A further important role District and Borough Councils have is that of Local Planning Authority, whereby they grant planning permission for most new developments in their area. With this comes a need to consider the impact new developments will have on flooding, and to listen to the advice provided by the LLFA concerning surface water drainage proposals for major developments.

### Riparian (Land) Owners

Riparian owners are responsible for the upkeep of watercourses, ditches, culverts, and drains that run through or adjacent to their land. This means that they have a responsibility to maintain their watercourse and any structures on it so they are free of obstruction. If this is not done, RMAs have the power, if appropriate, to carry out enforcement on land owners to ensure that adequate maintenance takes place. This is also the case for other drainage systems and flood defences. These enforcement powers enable RMAs to carry out maintenance works and then back charge the land owner if necessary.

Further details on riparian responsibilities can be found on the [SCC website](#), or in the EA document '[Living on the Edge](#)'.

### Utility Companies

Water and sewerage companies are responsible for the active sewerage networks in their respective areas within Surrey. This includes the foul and some surface water drains where they have maintained control over the asset. The majority of Surrey's network is owned and maintained by Thames Water; however there are areas that are served by Southern Water.

Water companies manage the risk of flooding to water supply and sewerage facilities along with the risk to others from the failure of their infrastructure. Key flood risk management responsibilities include:

- Ensuring their systems have the appropriate level of resilience to flooding and maintaining essential services during emergencies
- Maintaining and managing their water supply and sewerage systems to manage the impact and reduce the risk of flooding and pollution to the environment
- Providing advice to LLFAs on how water and sewerage company assets impact on local flood risk
- Working with developers, landowners and RMAs to understand and manage risks
- Working with the EA and District and Borough councils to coordinate the management of water supply and sewerage systems with other flood risk management work

Where there is frequent and severe sewer flooding, sewerage undertakers are required to address this through their investments plans, regulated by Ofwat.

### Other Risk Management Authorities

Other Risk Management Authorities who have responsibilities for flooding issues in Surrey are:

- **Highways England** – for providing and managing highway drainage on their networks
- **Internal Drainage Boards** – independent public bodies responsible for managing water levels in low lying areas. Only the Upper Medway IDB covers a small part of Surrey

### Which RMA to contact and when

With a number of different RMAs operating within Surrey it can sometimes be confusing to residents who they need to contact when flooding occurs. The table below provides a summary of which organisation should be the first point of contact for specific situations.

Please note that in an emergency or a situation where there is threat to life, you should dial **999**.

Type of flooding	Relevant Risk Management Authority	Contact details
Main River	Environment Agency	Floodline service: 0345 988 1188 Incident number: 0800 80 70 60 - 24 hours
Ordinary Watercourse	Surrey County Council	Contact centre: 03456 009 009 (8am-6pm weekdays) Highways emergencies: 0300 200 1003
Surface water		
Groundwater		
Surcharging from Highway drains		
Surcharging from sewer	Thames Water Southern Water	Thames Water: 0800 316 9800 Southern Water: 0333 000 0365
All types	Surrey County Council District/Borough Council (in conjunction with other RMAs)	As above

## Types of Flooding

### Overview

The definition of flooding is “any case where land not normally covered by water becomes covered by water”, as defined in the [Flood and Water Management Act \(2010\)](#).

As stated in the Environment Agency’s (EA) [National Assessment of Flood Risk \(2009\)](#), “Flooding is a part of nature”. Consequently, flooding is something that cannot be stopped. However, it can be managed by looking at the areas which are most at risk of major flooding events and developing plans to help reduce this risk, specifically by looking at what is causing flooding in different areas.

Flooding is caused by a combination of factors such as high levels of rainfall, a river breaking its banks, ground water seepage and breaches of reservoirs. The definition of flooding does not however include overflow or breaches from sewerage treatment plants or burst water mains. This is because these both fall under the [Water Industry Act \(1991\)](#).

Surrey experiences various different types of flooding. Explanations of the types that pose significant risk to the County are detailed below and associated mapping of these different sources of flood risk can be found as an appendix to the LFRMS.

**River (fluvial) flooding** takes place when a river’s capacity is exceeded and it bursts its banks, forcing the overtopping water onto surrounding land.



Fig. 2.1 – River Thames flooding



Fig. 2.2 – surface water flooding

**Surface Water (pluvial) flooding** is caused when water does not penetrate into the ground due to the surface being impermeable (not porous). It also occurs when the ground is already saturated or because drains are not functional or overwhelmed. This leaves the water with nowhere to go to and as a result, it will remain or flow on the surface.

**Groundwater flooding** occurs where the natural level of the water in the ground (water table) has risen above the surface of the ground. Understanding of this form of flooding is limited although the functioning of underground springs is known to be a cause. It is often difficult to distinguish from surface water flooding.



**Surcharging** occurs when a foul (sewer) or surface water drain is blocked or overwhelmed and water is discharged to the surface instead of draining away.



**Fig. 2.3 – sewer surcharge**

It is important that we collect information on flooding when it happens as this allows us to understand the cause of the flooding and develop plans for reducing the risk of flooding in the future. One dataset we use to record this information is the Wetspots database.

### Wetspots

"Wetspot" is a term used by SCC to describe the location of a flood incident that has been reported. While we unfortunately aren't able to address every wetspot in the County, we maintain and monitor a database of every one that is reported to us.

The purpose of this database is to assess and prioritise which wetspots in Surrey are the most significant and therefore most in need of remedial works. Those that are deemed to be posing the biggest risk are allocated a high score and then programmed into Surrey County Council's capital works programme. The criteria used to prioritise wetspots assesses the following factors:

- Safety
- Internal property flooding
- Disruption to critical services
- Social and economic impacts
- Duration and frequency of flooding

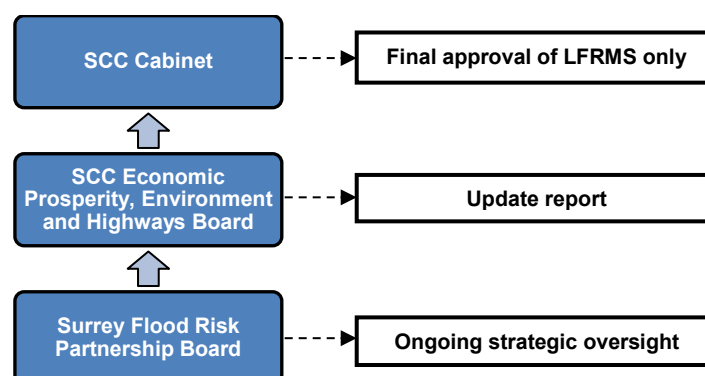
Further information – including the complete wetspot database for Surrey – is available on the [Surrey County Council website](#).

## Governance and Implementation of the Strategy

Following publication of the Local Flood Risk Management Strategy (LFRMS), its objectives and action plans must be monitored to ensure that they are carried out and achieved. There will also be a need in the future to develop the objectives in order that they reflect changing legislation and priorities.

In this regard the Strategy is a living document. It would be impractical to constantly change its objectives as this wouldn't provide Surrey with a clear direction or approach to flood risk management. However, it is important for the Strategy to remain current, so that it does not become out of date within a few months or years of publication.

To oversee this work a governance structure is required. This is outlined below:



**Fig. 3 - LFRMS governance structure and responsibilities**

### Surrey Flood Risk Partnership Board

The Surrey Flood Risk Partnership Board (SFRPB) is a local partnership that incorporates representation from all organisations in the County who have a role to play in flood risk management. Specifically, this includes the Environment Agency, Surrey County Council (SCC), District and Borough Councils, water companies and emergency responders, among others.

The purpose of the SFRPB is to provide strategic leadership on flood risk management in Surrey. It promotes the principles of partnership working and efficiency and provides a forum through which the various Risk Management Authorities in the County can work together in order to manage flood risk.

The Board meets every quarter and takes strategic decisions on a number of different activities including funding, capital works, surface water management plans and development of the LFRMS. It signs off the final version of the Strategy prior to its submission for approval by elected Members.

Because the SFRPB has played a key role in the development of the Strategy it is appropriate that it maintains strategic oversight of it following implementation. Therefore any proposed future changes to the document will be discussed and approved by the Board before being taken forward.

### Surrey Flood Risk Partnership Board Working Group

The Working Group (WG) is a group of officers drawn from the organisations represented on the SFRPB. Its purpose is to carry out tasks and projects as decided by the Board. In this structure the SFRPB can be regarded as the decision-making body, while the WG is its 'practical arm'.

## **SCC Economic Prosperity, Environment and Highways Board**

SCC's Economic Prosperity, Environment and Highways Board (EPEHB) acts as a Scrutiny Board for all matters within its remit.

The EPEHB consists of elected County Councillors who have an interest or expertise in transport and environmental issues. Although the Board isn't a decision-making body, it can make recommendations to the County Council's Cabinet which must be considered when policy decisions are taken. As flooding falls within the remit of the Board it will be consulted on the final draft version of the Strategy, prior to submission to Cabinet.

It is proposed that the EPEHB receive update reports detailing progress towards achievement of the Strategy's objectives.

## **SCC Cabinet**

SCC's Cabinet is the executive body that takes all major policy decisions at the County level. In order for the Strategy to be implemented it must be signed off and approved by the Cabinet. As it is a major decision making body, there is no requirement to submit future updates or proposed changes to the Strategy – this role will be performed in the main by the SFRPB.

## Local Flood Risk Management Strategy alignment with Surrey County Council Corporate Values and Objectives

As a LLFA, Surrey County Council has a significant number of responsibilities with regard to flood risk management. In order to fulfil these responsibilities it has a Strategic Network Resilience (SNR) Team, which sits within the Asset Management Group of the Council's Highways and Transport Service. As a part of these Groups, the LLFA work carried out by the SNR Team must adhere to these Groups' wider objectives and values. This work includes all activities associated with the LFRMS.

There are four main strategies of the County Council that the LFRMS must align with:

- 'Confident in Surrey's Future' Corporate Strategy 2015-20. This has three key themes: wellbeing, economic prosperity and resident experience
- SCC Highways and Transport Strategy, which follows the same themes of the Corporate Strategy
- SCC Highways' Strategic Business Plan
- SCC Highways' Asset Management Strategy (AMS)

Because the themes of the Highways and Transport Strategy mirror those of the Corporate Strategy albeit in more detail, it is the latter three documents upon which the LFRMS will be aligned.

**Fig. 4 – LFRMS interaction with other SCC strategies**



### Highways and Transport Strategy

SCC's Highways and Transport Strategy provides specific direction and context as to how the service will meet the objectives of the Council's Corporate Strategy. Set out below are these objectives followed by how the LFRMS aligns with them.

#### Corporate Objective 1: Wellbeing

*"Everyone in Surrey has a great start to life and can live and age well".*



Highways and Transport Strategy context:

*“Our network is relied on by thousands of people and businesses every day. Our service supports the people of Surrey by making streets safe and reliable, offering more travel choices, and providing residents with access to schools, health services and care”.*

How achievement of the LFRMS objectives will support this:

- An effective capital works and maintenance programme will better protect Surrey’s highways assets, granting residents more secure and reliable access
- By raising awareness and reducing the risk of flooding, residents will become safer
- We will act on feedback received from community groups and flood action groups, to provide a more responsive service which is aligned to the priorities of local communities

**Corporate Objective 2: Economic Prosperity**

*“Surrey’s economy remains strong and sustainable”.*

Highways and Transport Strategy context:

*“The highways and transport infrastructure we build and maintain provides the foundation of a strong economy in Surrey: it creates routes in to businesses, jobs for residents and access to homes and communities where people want to live. We deliver value today, while planning and investing for the future”.*

How achievement of the LFRMS objectives will support this:

- Reducing the risk of flooding to infrastructure and businesses will in turn reduce the cost of recovering from a flood event and may lower insurance premiums, which will make Surrey a more attractive place to live and work
- We will adopt new and innovative approaches to obtain partnership funding contributions from a wide range of sources
- Working with communities and businesses to address key issues in their area will enable us to support local priorities to promote economic growth
- Ensuring that our flood alleviation schemes are maintained will allow them to contribute to and encourage economic growth

**Corporate Objective 3: Resident Experience**

*“Residents in Surrey experience public services that are easy to use, responsive and value for money”*

Highways and Transport Strategy context:

*“Residents are at the heart of how services are designed and delivered, with appropriate influence, control and choice on issues that are important to them. Our professional service provides high quality, innovative solutions that ensure Surrey residents get value from the network now and in the future”*

How achievement of the LFRMS objectives will support this:

- An effective capital works and maintenance programme will reduce the likelihood of disruption to the network

- Close working and communication with partner authorities will allow for more co-ordinated management of our assets and programmes, which will produce flood schemes of a high quality to protect the network
- We will listen to the feedback of residents and design schemes and programmes of work that reflect their needs and priorities, where appropriate
- We will support residents to access training that enables them to become more resilient, which will empower them to do more for their communities

### **Highways and Transport Strategic Business Plan**

In order to provide strategic direction to the work of the Highways and Transport Service at Surrey, a five year strategic business plan has been developed. This sets out how we intend to drive continuous improvement to the service, maximise our opportunities and deliver the Council's overarching goals of wellbeing, economic prosperity and resident experience.

This plan has three core objectives, and the LFRMS must align with these in order to support the wider work of the Highways and Transport Service.

#### **Strategic Business Plan Objective 1: Improve and Grow Surrey's Highways Infrastructure**

The development and construction of flood alleviation schemes will improve Surrey's highway network by making it more resilient, accessible and reliable. Residents will be better protected from flooding and as a result the impacts of this form of severe weather will be reduced.

#### **Strategic Business Plan Objective 2: Maintain and Operate the Network**

We will invest our capital and revenue funding in maintenance and capital schemes that will make best use of existing infrastructure to get the most value from our highways assets. The construction of flood alleviation schemes will also make the network easier to maintain and operate.

#### **Strategic Business Plan Objective 3: Develop the Service**

All work stemming from the LFRMS will have a long-term perspective and be as future proof as possible. This will support the service to adapt and evolve to changing demands.

### **Highways and Transport Asset Management Strategy**

As per the SCC Highways and Transport Strategy, the LFRMS must also align with SCC Highways' Asset Management Strategy (AMS) for the reasons detailed above.

SCC's AMS sets out how the Highways Service will maintain and improve its assets in the years to come. With the needs of users increasing and our budgets decreasing, it is essential that we get this plan right. Key to achieving this outcome is that all other associated strategies align with, and support, the AMS.

#### **Asset Management Strategy Approach 1: User Needs**

The LFRMS will support this principle by prioritising our works based on the needs of, and feedback received from, service users. We will gather information from flood action groups, community groups and the consultation for this Strategy in order to provide a service that reflects the needs of users.

**Asset Management Strategy Approach 2: Understanding our Assets**

To deliver a flood risk management approach that is effective and value for money, we must have a good knowledge of the state of repair of our flood risk assets. We will do this by adhering to our responsibilities under section 21 of the Flood and Water Management Act (FWMA) (2010) to maintain a register of flood risk assets. We will also prioritise our maintenance and capital works to those areas of greatest need, and carry out work as proactively as possible to reduce risk and costs.

**Asset Management Strategy Approach 3: Levels of Service**

In the current financial climate it is not possible to apply the same levels of spending across the entire County with regards to flood risk. We must therefore use our understanding of user needs and the status of our assets to adapt and target our levels of service in a manner that is appropriate and proportionate to the priorities of local communities.

**Asset Management Strategy Approach 4: Prioritising our Efforts**

We work very closely with residents and engage with them in a number of ways via flood action groups, community groups, site visits and informal enquiries. We also maintain a strong relationship with Members by liaising with them on a regular basis and attending Local Committees. The information we gather from these activities is of great value as it enables us to understand which areas require most attention based on local knowledge and where further investment is required.

## Prioritising Flood Schemes

The development and construction of flood schemes is a key element of reducing flood risk and one that attracts a significant amount of interest. This annexe therefore provides an overview as to how schemes are developed and where funding is sourced.

There are a number of different sources from which Risk Management Authorities (RMAs) can receive funding for schemes. As funding is limited we have to prioritise flood alleviation schemes in the areas of greatest need. To ensure that such decisions are taken on a risk and evidence based assessment, we follow a set of principles and criteria that quantify where the areas of greatest need are.

These criteria vary depending on the source of the funding for a scheme. This is because different funding sources have different requirements as to how money must be spent. Below is a summary of where funding for flood alleviation schemes comes from and how these schemes are prioritised for each source.

- **Flood Defence Grant in Aid (FDGiA):** this funding is received from Central Government (Defra) and allocated to Local Authorities based on criteria set by the Thames Regional Flood and Coastal Committee. A key element of this criterion is for schemes to provide a boost to the national economy.
- **Local Enterprise Partnerships (LEPs):** this funding is allocated by regional partnerships that receive devolved funds from Central Government and allocate money to projects which protect and improve the economy in a particular region.
- **Highway Capital Drainage:** this funding comes from SCC's central budget and is allocated for highways related flooding.
- **RMA Capital Drainage:** this is a one-off project funded by SCC to resolve severe flooding issues. It is allocated for communities affected by local flood risk.

### Priority factors:

FDGiA	LEPs
<ul style="list-style-type: none"> <li>• Property flooding</li> <li>• Areas of deprivation</li> <li>• Environmental benefits</li> <li>• Available partner contributions*</li> </ul>	<ul style="list-style-type: none"> <li>• Economic growth</li> <li>• New development areas</li> <li>• Transport route resilience</li> <li>• Available match funding**</li> </ul>
Highway Capital Drainage	Risk Management Authority Capital Drainage
<ul style="list-style-type: none"> <li>• Safety</li> <li>• Property flooding</li> <li>• Major congestion</li> <li>• Road priority (i.e. A or B road etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Property flooding</li> <li>• Large scale community impact</li> <li>• Catchment betterment (i.e. improving impacts upstream/downstream of scheme)</li> </ul>

\*Partner contributions or 'local levy' are a further potential source of funding. These are often provided by businesses, individuals or bodies local to a scheme who will benefit from its construction.

\*\*Funding from LEPs comes from European funding and their rules require match funding to be made available from domestic funds. This can come from government, other public sector and the private sector.

## Allocating Scheme Funding

It is often the case that a given flood alleviation scheme will not be funded from one source alone. In such circumstances a number of different RMAs may be contributing and the amount of funding they provide is calculated in accordance to a number of broad factors relative to the specific scheme in question.

The following factors may be taken into account when an RMA's contributions to a scheme are calculated; however they are not given the same weighting for every project, because the local conditions for each individual scheme are always different:

- Perceived benefit gained from construction
- Income from Council Tax
- Ownership of local infrastructure, land and/or assets
- Contribution to previous flood alleviation works in the local area

SCC has also applied principles towards specifically calculating the value of its own contributions to flood schemes. These include:

- The scheme contributing to SCC fulfilling its responsibilities as Lead local Flood Authority
- SCC directly benefitting through the protection of its assets or by protecting the highway network
- The scheme removing the need for temporary defences
- Reducing costs related to incident management and flood recovery
- The scheme being seen as a priority in delivering the Flood Risk Management Strategy

The above considerations provide guidance and allow for a flexible and adaptable means of determining scheme contributions, rather than setting a rigid process.

## Consultation Summary

A public consultation on the Local Flood Risk Management Strategy (LFMRS) ran from 6 January to 24 February 2017 to grant residents and other interested parties an opportunity to shape the objectives. The consultation was run online via the SCC website and promoted in the following ways:

- SCC Members were informed and encouraged to share it with their residents
- SCC's Local Committee Chairman's Group, Economic Prosperity, Environment and Highways Board, and Resident Experience Board were all briefed and asked to promote the consultation to the groups or individuals they feel that it most concerned
- All District and Borough Councils were informed and encouraged to share it with their residents
- The Environment Agency shared it with community groups they are involved with
- All existing Flood Action Groups that SCC officers are involved with were informed
- Surrey Association of Local Councils was informed
- Banners were placed on the SCC website
- The link to the consultation was shared via Twitter and Facebook
- A short article was placed in Surrey Matters magazine

## Consultation questions

Respondents were asked a series of open questions directly relating to the Strategy's proposed objectives as follows:

1. We said we would manage data on flood risk efficiently and that we would share data between risk management authorities and with you, the public. In terms of communicating data with you – is there anything specific you want to see and what data would be most useful for us to share with you?
2. We said we would reduce flood risk by delivering an effective maintenance regime for drainage assets and managing our estates across the county in a sustainable manner. How do you think we should change the drainage regime e.g. is it a case of prioritising some drains, so some get more maintenance time than others?
3. We said we would agree with partners who the Risk Management Authorities in Surrey are and define what each of their responsibilities would be. We said we would also establish clear lines of communication with them. How could we improve your understanding of who to go to if you need help with flooding?
4. We said that we would make sure private owners were aware of their riparian responsibilities (<https://www.gov.uk/government/publications/riverside-ownership-rights-and-responsibilities>) to maintain drains and drainage assets and watercourses. Do you know about riparian responsibilities and how can we help you understand them more? How would you like us to communicate these to you?
5. We said we would support Surrey residents to improve community resilience and empower local people to reduce the risk of flooding for themselves. Do you know how to protect your property? Would you like more information about what community resilience consists of? And are there any examples of community resilience that you would most like us to support?
6. We said we would reduce the risk of flooding from new and existing development through local planning policy and processes. What are your main concerns regarding the impact of development on flooding? How would you like us to address this?



7. We said we would reduce flood risk from local sources by building and installing flood defences. How would you best like to hear about these?
8. Finally, we said we would investigate significant flooding incidents to produce recommendations – in the form of Flood and Water Management Act (2010) section 19 reports - to improve our understanding of and resilience to flooding in that location. Have you ever used a section 19 report? How could we improve these reports? Was there any other information you wanted from them?

## Responses

A total of 54 responses were received. The areas and themes that were raised most frequently are summarised below. Each theme also has an explanation as to how the suggestions received from the consultation will be incorporated into the Strategy.

Theme: *Greater access to flood map information*

How this will be incorporated: Many respondents wanted access to flood mapping via SCC in its capacity as Lead Local Flood Authority. We have created a 'Flood Atlas' which forms an annexe to the Strategy. It includes a series of flood maps for all main catchments in Surrey and details the types and risk of flooding across the County. We will ensure that it is hosted in an accessible location on the SCC website and that it is promoted to residents and all other interested parties.

Theme: *Issue flood risk warnings*

How this will be incorporated: A number of people requested to be given flood warnings in the event of an emergency. These are currently issued by the EA and are not directly the responsibility of the LLFA. However, as part of our work to develop a communications Strategy under objective 3, we will investigate how SCC can further promote EA flood warnings via social media and other means, and also encourage residents to sign up for these warnings directly with the EA.

Theme: *Share more information on what Risk Management Authorities (RMAs) are doing to reduce flood risk and lessons learned*

How this will be incorporated: The first part of this request (reduction of flood risk) will be addressed as part of objective 7 of the Strategy, which will include workstreams to promote capital works across the County (for more information please see the 'promote flood alleviation work' theme on page 31). The lessons learned element will be included as part of objective 8 of the Strategy (flooding investigations), which will encourage incorporation of this information into section 19 reports.

Theme: *Gully/drain cleaning schedule to be made publicly available*

How this will be incorporated: SCC's gully cleaning schedule is already publicly available to view online. However, the number of responses that weren't aware of this suggests that it is not known to the public and as a result we will better promote availability of the schedule to residents via flood action groups, Members and other means. We will also review the schedule's location on the SCC website to ensure that it is accessible.

Theme: *Drains and gullies that are damaged/block frequently or in high risk areas should be prioritised for cleaning*

How this will be incorporated: Objective 2 of the Strategy is dedicated to maintenance. Contractors and residents will be encouraged to report repeat problem areas and this information will be used to prioritise the cleaning of gullies and drains that become blocked more frequently than others.

Theme: *Clearer information as to what Risk Management Authorities do and who to contact in a flood event*

How this will be incorporated: Objective 3 is dedicated to achieving this. As part of the objective's action plan we will undertake a project to agree and define the roles of all RMAs. A key output of this work will be to publish information that sets out what the roles and responsibilities of all RMAs in Surrey are, and who should be contacted and when in a flood event. Once published all RMAs will be encouraged to promote this information to residents. A number of useful suggestions were received regarding how to share this information, including via Surrey Matters, Council Tax demands, social media, leaflets and the SCC website. All of these will be considered and used if feasible. One potentially viable option is to put the agreed roles of RMAs and their responsibilities on a card or fridge magnet so that residents have them to hand when required. This will also be implemented if possible.

Theme: *Explain and promote riparian responsibilities*

How this will be incorporated: SCC and its partners already actively promote riparian responsibilities through flood action groups, Members and other community engagement work. We have also recently launched a riparian awareness campaign and will continue to promote this as widely as possible. It was suggested that Surrey Matters, social media, leaflets and the SCC website be used to share this information and we will do this as part of the awareness campaign. Objective 4 of the Strategy directly addresses riparian responsibilities and workstreams within it will facilitate a structured, partnership approach between RMAs whereby residents across the County will be made more aware of their riparian responsibilities and supported to fulfil them.

Theme: *Keep a record/register of riparian assets*

How this will be incorporated: It was suggested that RMAs keep a register of riparian assets/owners across the County in order to make management and enforcement of this issue more effective. There is a specific action under objective 4 of the Strategy which aims to achieve this very goal – following approval of the LFRMS SCC and its partner RMAs will develop a register of riparian assets on a reactive basis to improve knowledge and management of these assets.

Theme: *Support flood action groups across the County*

How this will be incorporated: Objective 5 of the Strategy focuses on this very theme and SCC and its partners will continue to support and develop flood action groups across Surrey where there is a local desire for this to happen.

Theme: *Provide advice around property level protection (PLP) and grants*

How this will be incorporated: SCC as LLFA unfortunately does not have the resource nor duty to provide advice around PLP products and as such it is not possible to have a specific action or objective related to this suggestion. However, as part of the workstreams under Objective 5 (Community Resilience), we can refer residents who ask for advice on this matter to the National Flood Forum's approved list of PLP contractors with whom they can discuss possible options. Regarding grants, we will promote Central Government Grants that the LLFA administers (such as the Repair and Renew Grant in 2014/15) and can signpost residents to others that we are aware of.

Theme: *Work with the National Flood Forum (NFF) to promote community resilience*

How this will be incorporated: Many respondents provided positive feedback on the work of the NFF in Surrey and encouraged the County Council to work with them further. In recognition of the impact the NFF have had in Surrey, SCC have a consultancy arrangement with them whereby an NFF officer is employed to work with communities in need of support across the County. This arrangement is due

to expire in 2017 however we will maintain a working relationship with the NFF beyond that timescale and they will continue to support communities that need them in their capacity as a national charity.

Theme: Restrict and manage development on floodplains and greenbelt

How this will be incorporated: Local Planning Authorities (LPAs) determine whether development in a particular Borough or District will go ahead – this is not within the remit of the County Council. However, SCC in its capacity as LLFA will use its statutory consultee role on major developments to recommend approval or refusal for planning permission depending on whether the development has sufficient drainage plans in place. These recommendations take into account any proposals that include building on green belt and potentially removing natural means of flood alleviation, which was a common concern of respondents. This feedback will help LPAs to manage and control major development on floodplains. There was also concern raised regarding the views/objections of local residents being taken into account when planning applications are submitted. Again, this is a matter for the relevant LPA and all submissions with regards to specific planning applications will be considered in accordance with established policy and legislation.

Theme: Promote the use of sustainable drainage

How this will be incorporated: Objective 6 of the Strategy looks specifically at sustainable drainage (SuDS) and its action plan includes activities that promote the use of SuDS as widely as possible, including their retrofitting where appropriate. As mentioned above, SCC will use its statutory consultee role to encourage the use of sustainable drainage on major developments. Therefore the Strategy's approach will support LPAs to manage development on floodplains effectively, by ensuring that any proposals will bring benefits and improvements to drainage for the surrounding catchment.

Theme: Promote flood alleviation works

How this will be incorporated: Many respondents expressed an interest in being informed of flood alleviation works that were being planned for their area. Although SCC and its partner RMAs already do so via flood action groups, local Members, Parish Councils and Residents Associations, it was suggested that residents who don't necessarily attend these meetings or who aren't in regular contact with such groups could be kept updated via other means. Suggestions included a mailing list, the SCC website, social media, leaflets, drop-in events, the local press and Surrey Matters. It was also suggested that the areas affected by flood alleviation works be specifically targeted for information sharing. As a result of this feedback we will consider these options for communication as part of our workstreams for objectives 5 (Community Resilience) and 8 (Capital Works).

Theme: Improve public understanding of Section 19 flooding investigations

How this will be incorporated: A majority of respondents stated that they were not aware of Section 19 investigations or what they were. As part of objective 8 of the Strategy we will work to promote the process among residents and include clear and accessible information relating to it on the SCC website. There was also feedback that the information in Section 19 reports should be made more useful for residents in terms of providing solutions and commitments as to what will happen next. Unfortunately, the requirement to carry out Section 19 investigations is set out in law and therefore does not allow flexibility in terms of the information that is presented in them. However, we would welcome feedback and will act on this where possible for any future Section 19 reports.

## List of Flood Action Groups in Surrey

The following list provides an overview of the Flood Action Groups (FAGs) that are currently active across Surrey. Please note that this list is subject to change as new groups form and current groups disband.

FAGs are community-based and community-led groups that find ways to reduce flood risk in their local area. They work with Risk Management Authorities to resolve issues and provide communities with a direct link to the organisations and groups that have responsibilities or an interest in flood risk management.

Each Group has its own action plan and/or list of priorities. If you would like to find out more about a particular Group, or about FAGs in general, please contact [flooding.enquiries@surreycc.gov.uk](mailto:flooding.enquiries@surreycc.gov.uk).

### Current Groups (as of March 2017)

- |  |                           |
|--|---------------------------|
| • Alfold                               | • Horley                  |
| • Ash Vale                             | • Godalming               |
| • Bookham                              | • Leatherhead and Fetcham |
| • Brockham and Strood Green            | • Leigh                   |
| • Burpham                              | • Ockley                  |
| • Burstow                              | • Pirbright               |
| • Byfleet                              | • Seale and Sands         |
| • Caterham on the Hill and Old Coulden | • Thorpe                  |
| • Charlwood                            | • Tilthams Green          |
| • Chobham                              | • Whyteleafe              |
| • Egham Hythe                          | • Willow Way              |
| • Farnham                              | • Worplesdon              |

# **SURREY LOCAL FLOOD RISK MANAGEMENT STRATEGY**

## **FLOOD MAPS**



**SURREY**

# SURREY LOCAL FLOOD RISK MANAGEMENT STRATEGY: Flood Information Maps

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*Click on one of the ten buttons*



# FLOOD INFORMATION MAPS - Introduction

## Background

Surrey is a County at high risk of flooding and has experienced several major flood incidents over the last ten years. Much of this flooding has occurred in the floodplain of the Lower Thames and its tributaries. There are also many localised spots prone to surface water flooding or the emergence of groundwater.

The Flood and Water Management Act (2010) places a number of responsibilities on the County Council in relation to flood risk. It designates us as Lead Local Flood Authority (LLFA) and outlines a number of roles that we must undertake. One of the most significant is the duty to develop, maintain, apply and monitor a Local Flood Risk Management Strategy (LFRMS) in our area.

## What are the Flood Information Maps?

The Flood Information Maps are a set of maps showing the risk of flooding from a variety of different sources and also known historic flood records. They support the LFRMS and improve public awareness of flood risk.

## Why have the Flood Information Maps been produced?

The Flood Information Maps are for members of the public who are interested in learning more about flooding across Surrey. They sit alongside the LFRMS to help improve the public's awareness and understanding of flood risk and through this awareness, help to improve community resilience.

## How do the Flood Information Maps work?

The Flood Information Maps are an interactive PDF document with embedded links, which make it easier to navigate to your map of interest. You can either view each page in order or jump to your map / topic of interest directly using the embedded links. We would recommend that before you view the maps, you read the map descriptions towards the front of this document which explain what information is shown on each map.

## How often will the Flood Information Maps be updated?

We will aim to refresh the Flood Information Maps every 2-3 years, or sooner if there are any significant changes or improvements to flood information available.

## Where should I go if I want more information about flooding in my local area?

In the first instance, please contact Surrey County Council by emailing [flooding.enquiries@surreycc.gov.uk](mailto:flooding.enquiries@surreycc.gov.uk). You can request a Flood Risk Report which will provide more detailed flood risk and historic flood incident mapping for your area of interest.

You can also visit the Environment Agency's website which provides online maps for river and surface water flood risk. The risk maps for river flooding also show the presence of flood defences and areas which benefit from them.

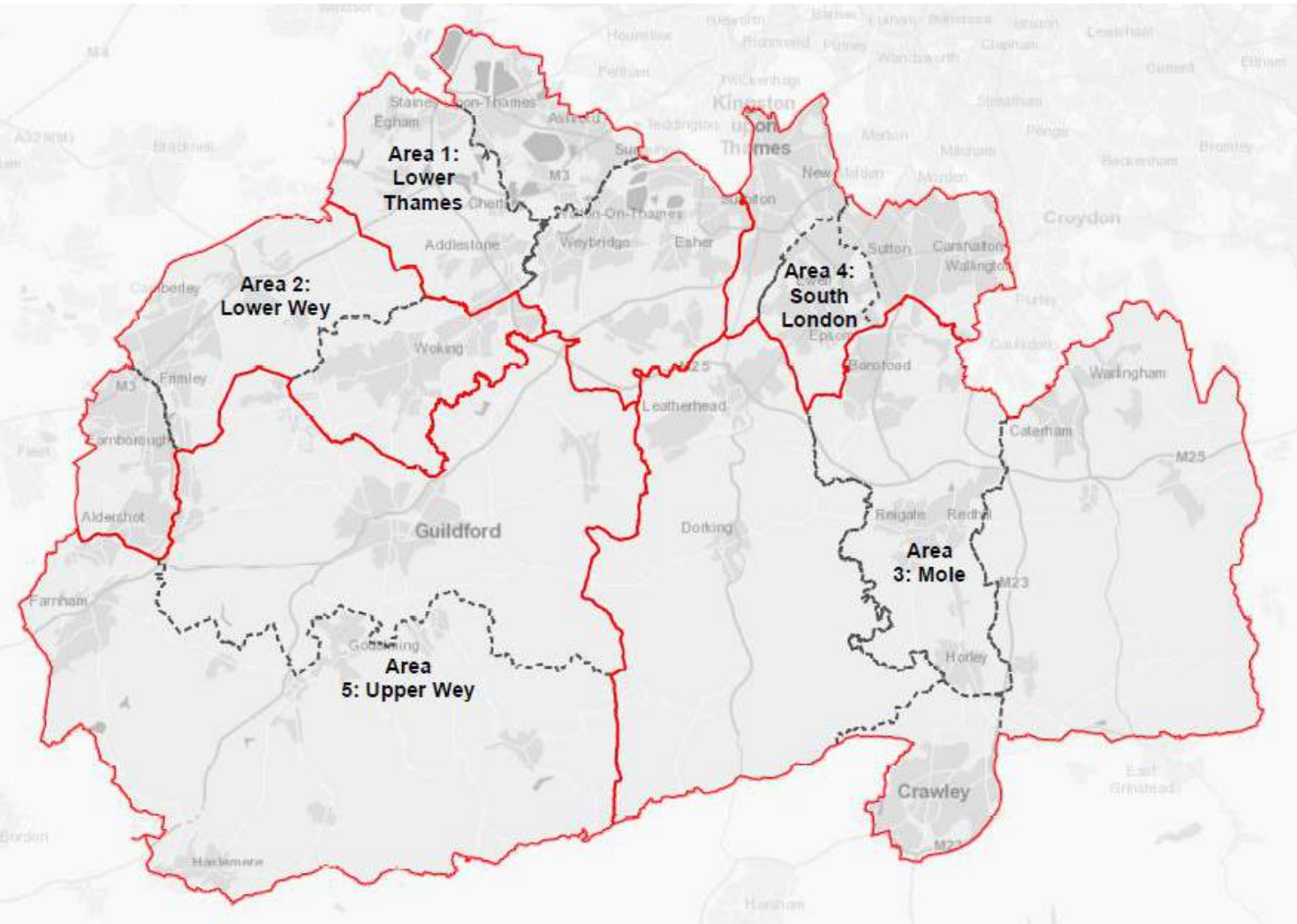
# FLOOD INFORMATION MAPS - Strategy Areas

## What can I find in the Flood Information Maps?

The Flood Information Maps consist of 25 maps showing 5 different types of flood information for the 5 different strategy areas across Surrey. The 5 strategy areas cover the whole of Surrey, plus some locations adjacent to Surrey where the nature of the flood risk spans beyond the county boundary. The adjacent locations are Rushmoor (Hampshire County Council), the Royal Borough of Kingston upon Thames and the London Borough of Sutton (both of which are Unitary Authorities and therefore each are designated as a LLFA). Not all data was available for the areas adjacent to Surrey Council’s boundary and therefore it is important to only use the information shown within the boundaries of the 5 strategy areas.

## What are the 5 strategy areas?

The 5 strategy areas are shown in the map below. The table below indicates the map reference number and which District or Borough Council sit within each strategy area.



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Area name	Map ref.	District or Borough Councils within the area
Lower Thames	Map 1	Runnymede, Spelthorne and Elmbridge
Lower Wey	Map 2	Surrey Heath, Rushmoor and Woking
Mole	Map 3	Mole Valley, Reigate & Banstead, Crawley and Tandridge
South London	Map 4	Kingston Upon Thames, Sutton and Epsom & Ewell
Upper Wey	Map 5	Guildford and Waverley

# FLOOD INFORMATION MAPS - Map Content



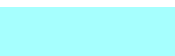
## What are the different types of flood information I can find on these maps?

### Risk of Flooding from Rivers

Flooding from rivers, also known as fluvial flooding, is caused when there is more water than the river channel can cope with. This leads to overtopping of the river banks and inundation of the surrounding land. Climate change is expected to increase the risk of fluvial flood events in the future.

The information shown in these maps is designed to raise awareness of the likelihood of fluvial flooding. The information provided by the Environment Agency on the risk of flooding from rivers is largely based on computer based models and is therefore only indicative. The map indicates the flood risk to areas of land (ignoring the presence of flood defences) and is not sufficiently detailed to show whether an individual property is at risk of flooding. Therefore, properties may not always face the same chance of flooding as the areas that surround them because we do not hold details about properties and their floor levels.

#### The map shows the following information

 Main river	Main rivers are large watercourses or smaller watercourses of local significance. The Environment Agency is the risk management authority for flooding from Main rivers.
 Flood Zone 3	Area with a high probability of flooding from rivers (> 1 in 100 or 1% annual chance of flooding).
 Flood Zone 2	Area with a medium probability of flooding from rivers (1 in 100 – 1 in 1000 or 1% to 0.1% annual chance of flooding).



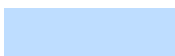
Note: Areas outside of Flood Zone 2 or 3 have a low probability of flooding from rivers and are known as Flood Zone 1 (< 1 in 1000 or 0.1% annual chance of flooding)

### Risk of Flooding from Surface Water

Surface water flooding is where intense rainfall exceeds the available infiltration capacity and / or the drainage capacity of the area thereby leading to overland flow of water. Climate change is expected to increase the risk of surface water flooding in the future. This source is also referred to as pluvial flooding.

The information shown in these maps indicates approximate areas which would flood in events with three different flood probabilities. The information is not sufficiently detailed to identify whether an individual property will flood

#### The map shows the following information

	Risk of flooding from surface water 1 in 30 (3.3%) annual chance	The extent of flooding from surface water that could result from a flood with a 1 in 30 or 3.3% chance of happening in any given year.
	Risk of flooding from surface water 1 in 100 (1%) annual chance	The extent of flooding from surface water that could result from a flood with a 1 in 100 or 1% chance of happening in any given year.
	Risk of flooding from surface water 1 in 1000 (0.1%) annual chance	The extent of flooding from surface water that could result from a flood with a 1 in 1000 or 0.1% chance of happening in any given year.

#### What does the term ‘annual chance’ mean?

Flood risk is often described according to the likelihood of occurrence. The term ‘annual chance’ is commonly used, meaning the chance or probability of a particular flood occurring in any given year. This is sometimes also expressed as a percentage. For example, a flood with a 1 in 100 chance of occurring in any given year can also be referred to as a flood with a 1% annual chance. This means that every year there is a 1% chance a flood to this magnitude could occur.



# FLOOD INFORMATION MAPS - Map Content


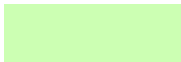

## What are the different types of flood information I can find on these maps?

### Susceptibility to Groundwater Flooding

Groundwater flooding is the emergence of groundwater at the surface (and subsequent overland flows) or into subsurface voids as a result of abnormally high groundwater flows, the introduction of an obstruction to groundwater flow and / or the rebound of previously depressed groundwater levels.

The information shown in these maps is based on the British Geological Survey’s conceptual understanding of the regional geology and hydrogeology (how water moves through the ground) and is therefore only an indication of where groundwater flooding may occur. It does not indicate hazard or risk, any information on the depth to which groundwater flooding may occur nor the likelihood of the occurrence of an event of a particular magnitude. This information should not be used in isolation to make planning decisions at any scale or to indicate the risk of groundwater flooding, but does provides a high level overview of groundwater flooding

#### The map shows the following information

	Limited potential for groundwater flooding to occur	In this area there is a <b>limited potential</b> , based on an understanding of the underlying geology and hydrogeological conditions, that <b>groundwater flooding may occur</b> .
	Potential for groundwater flooding of property situated below ground level	In this area there is the potential, based on an understanding of the underlying geology and hydrogeological conditions, that <b>groundwater flooding may occur in property or infrastructure below ground level</b> , such as basements.
	Potential for groundwater flooding to occur at surace	In this area there is the <b>potential</b> , based on an understanding of the underlying geology and hydrogeological conditions, that <b>groundwater flooding may occur above the ground</b> .

Note: All other areas are not considered to be prone to groundwater flooding




### Historic Flooding

It is important to understand where flooding has occurred previously in order to understand the mechanisms which cause the flooding to occur and thereby assess potential solutions to reduce the risk of flooding. It is also a statutory duty of Surrey County Council to investigate significant flooding incidents under the Flood and Water Management Act (2010).

The information shown in these maps indicates approximate areas which have flooded previously by a number of different sources i.e. flooding from rivers or groundwater. The information provided does not identify individual properties which have flooded previously. Areas of the map where there is no information shown does not necessarily mean that flooding has not occurred, just that it has not been reported and / or recorded within the datasets shown.

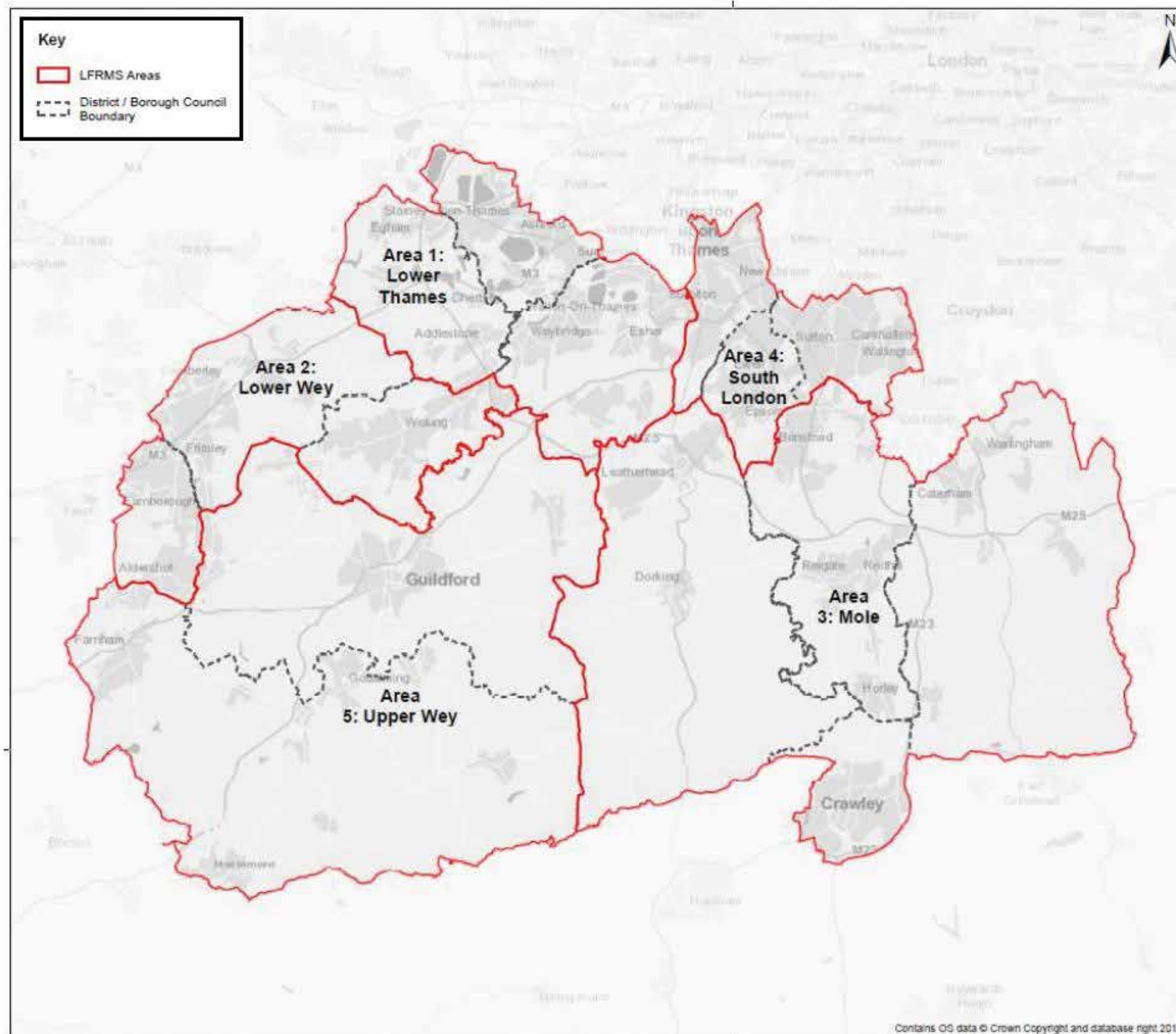
If you are aware of historic flooding incidents, please contact. [flooding.enquiries@surreycc.gov.uk](mailto:flooding.enquiries@surreycc.gov.uk)

#### The map shows the following information

	Main river	Main rivers are large watercourses or smaller watercourses of local significance. The Environment Agency is the risk management authority for flooding from Main rivers.
	Historic Flood Map	The Environment Agency’s Historic Flood Map gives an indication that the area has previously been flooded by rivers, groundwater or a combination of these sources.
	Top 100 wetspots	The Wetspots are a Surrey County Council database which indicate the approximate location of known previous flooding incidents, predominately on highways. Only the top 100 wetspots (based on the wetspot ranking score) are shown.

# OVERVIEW MAP

Use the overview map to navigate to the area you are interested in by clicking on the strategy area titles.





# AREA 1: Lower Thames

[Risk of Flooding from Rivers](#)

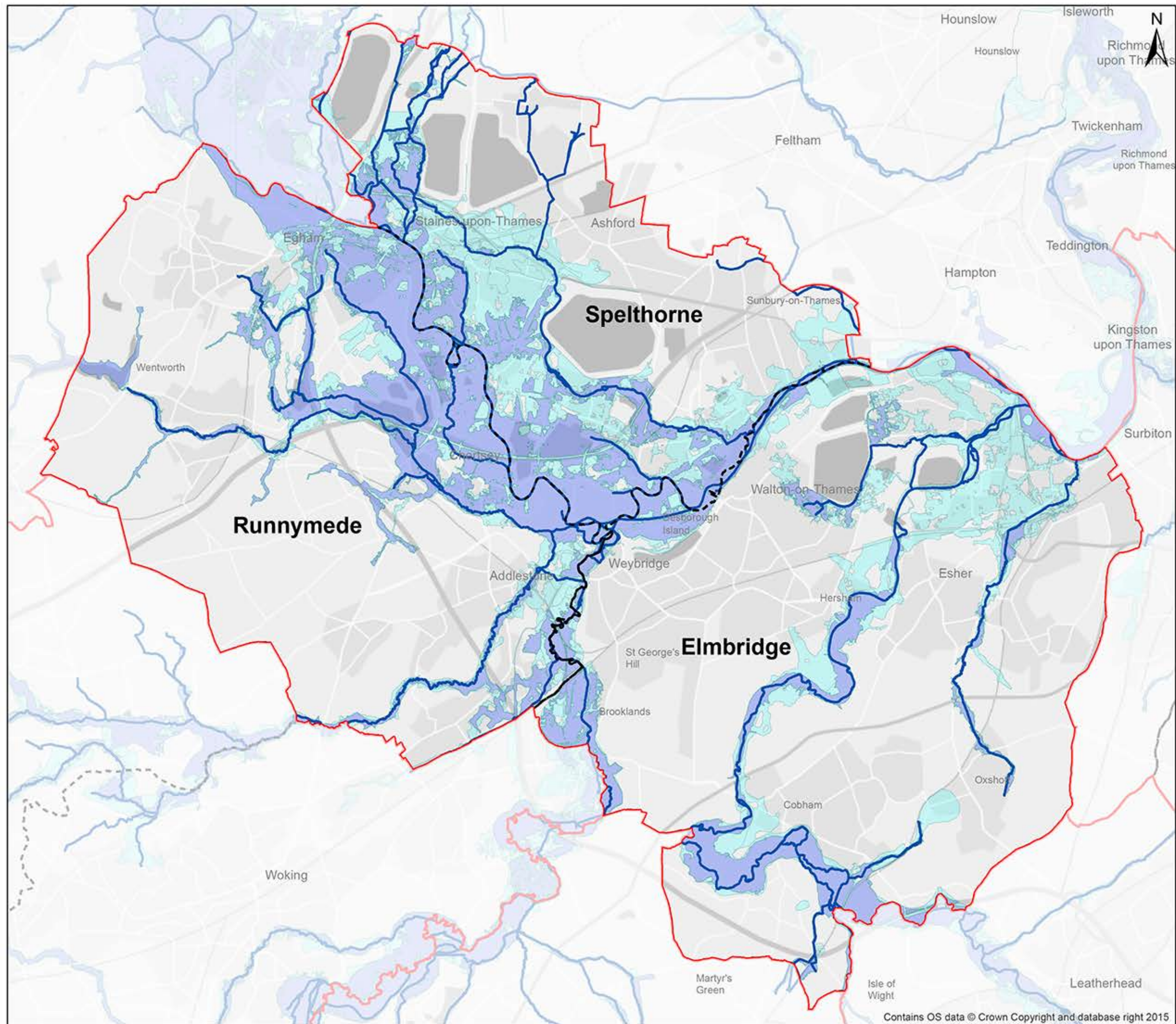
[Risk of Flooding from Surface Water](#)

[Susceptibility to Groundwater Flooding](#)

[Historic Flooding](#)

[Return to the overview map](#)





# Surrey Local Flood Risk Management Strategy

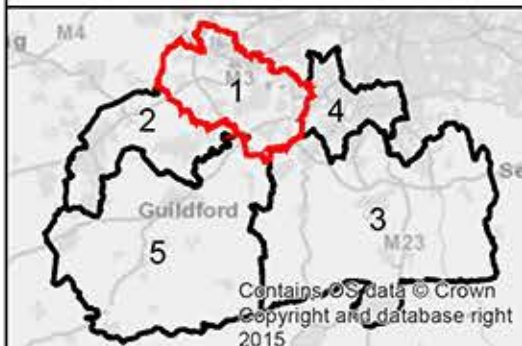
## Risk of Flooding from Rivers

### Area 1: Lower Thames

#### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Main River
- Flood Zone 3
- Flood Zone 2

Please note, areas outside of Flood Zone 2 or 3 have a low probability of flooding from rivers and are known as Flood Zone 1 (< 1 in 1000 or 0.1% annual chance of flooding)



Data sources: Environment Agency, Ordnance Survey

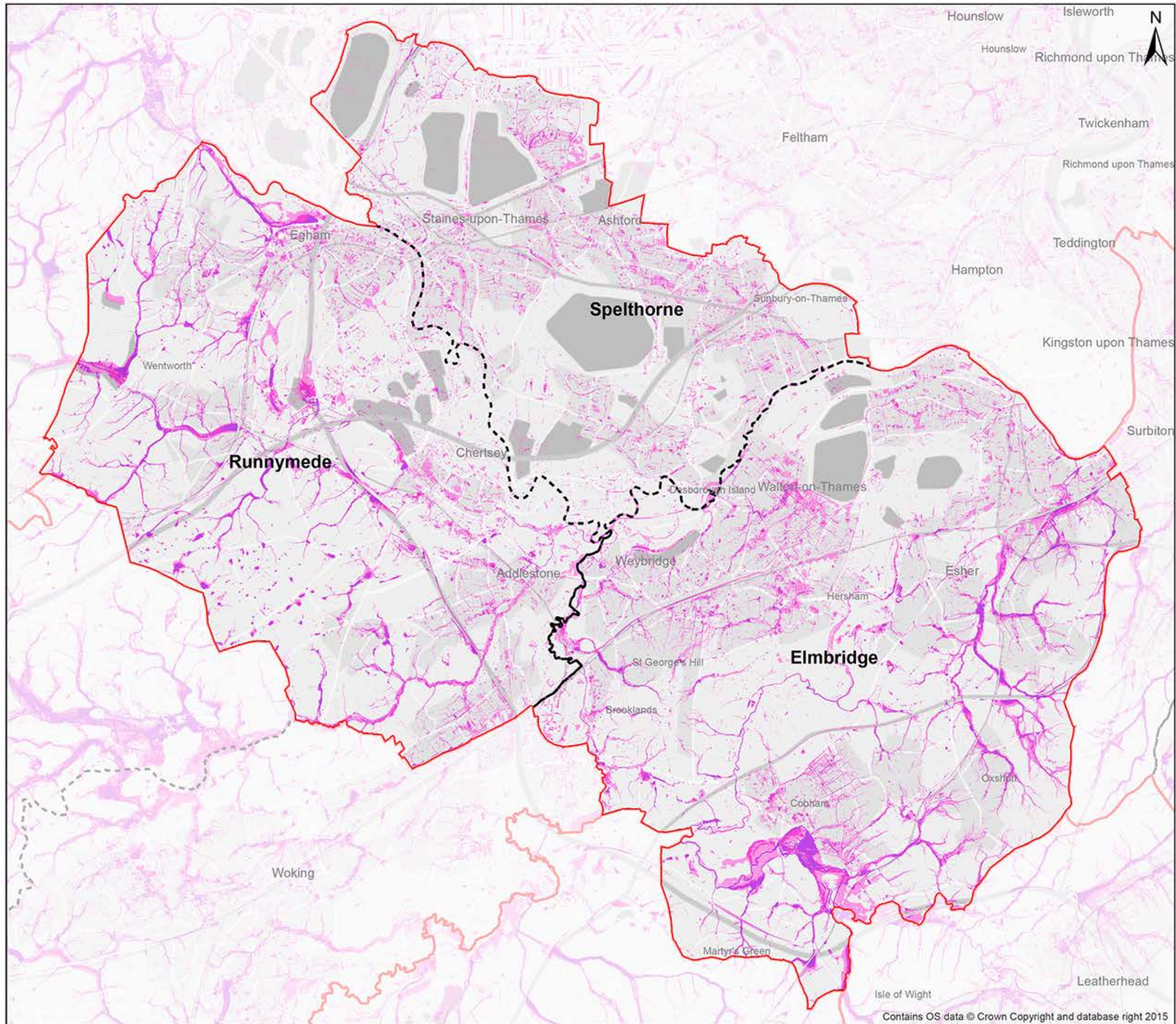
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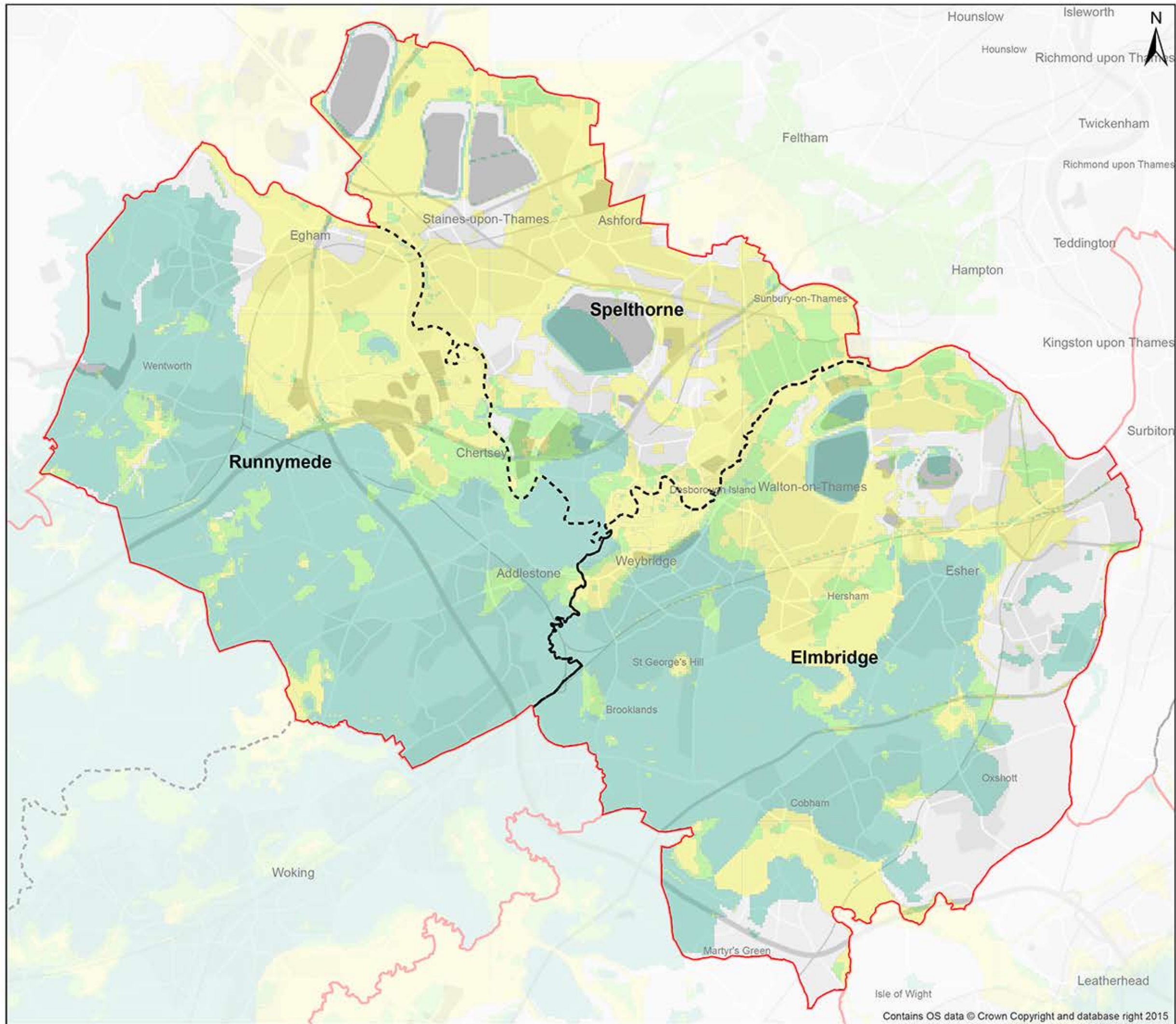
**SURREY**  
COUNTY COUNCIL

Purpose of issue: For Information		Revision: v0.1	
Reference: LFRMS_Fluvial_Area 1	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016









# Surrey Local Flood Risk Management Strategy

## Susceptibility to Groundwater Flooding: Area 1: Lower Thames

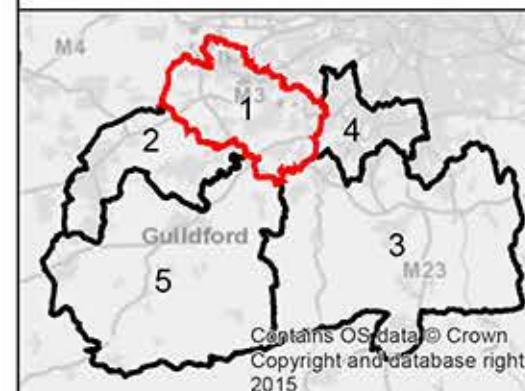
### Key

- LFRMS Areas
- District / Borough Council Boundaries

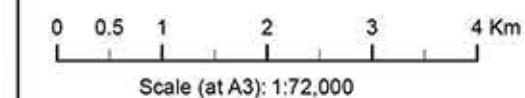
### Susceptibility to Groundwater Flooding

- Limited potential for groundwater flooding to occur
- Potential for groundwater flooding of property situated below ground level
- Potential for groundwater flooding to occur at surface

Please note all other areas are not considered to be prone to groundwater flooding.



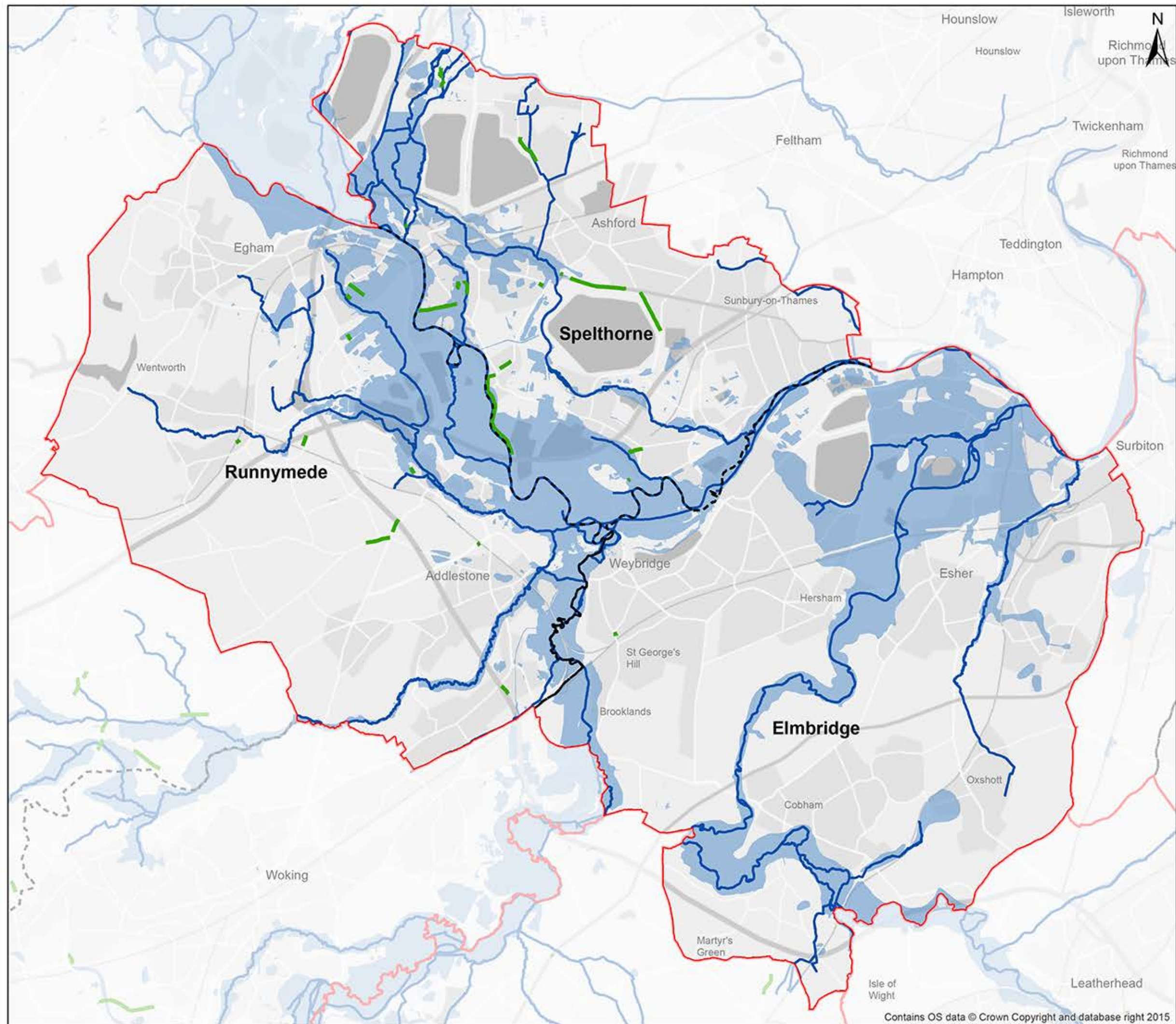
Data sources: Ordnance Survey, British Geological Survey



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Purpose of issue: For Information		Revision: v0.1	
Reference: LFRMS_GW_Map 1	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





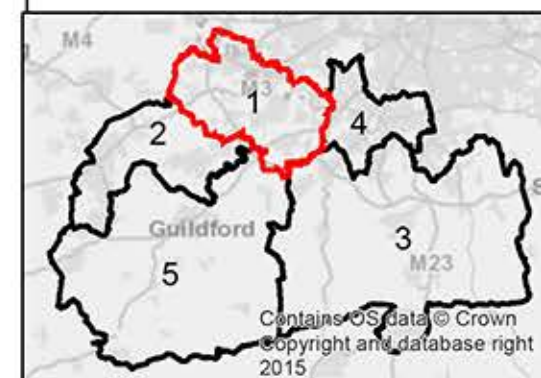
# Surrey Local Flood Risk Management Strategy

## Historic Flooding

### Area 1: Lower Thames

#### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Top 100 Wetspots
- Main River
- Historic Flood Map



Data sources: Environment Agency, Ordnance Survey, Surrey County Council

0 0.5 1 2 3 4 Km

Scale (at A3): 1:72,000



**SURREY**  
COUNTY COUNCIL

Purpose of issue: For Information		Revision: v0.1	
Reference: LFRMS_Historic_Area 1	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016



# AREA 2: Lower Wey

[Risk of Flooding from Rivers](#)

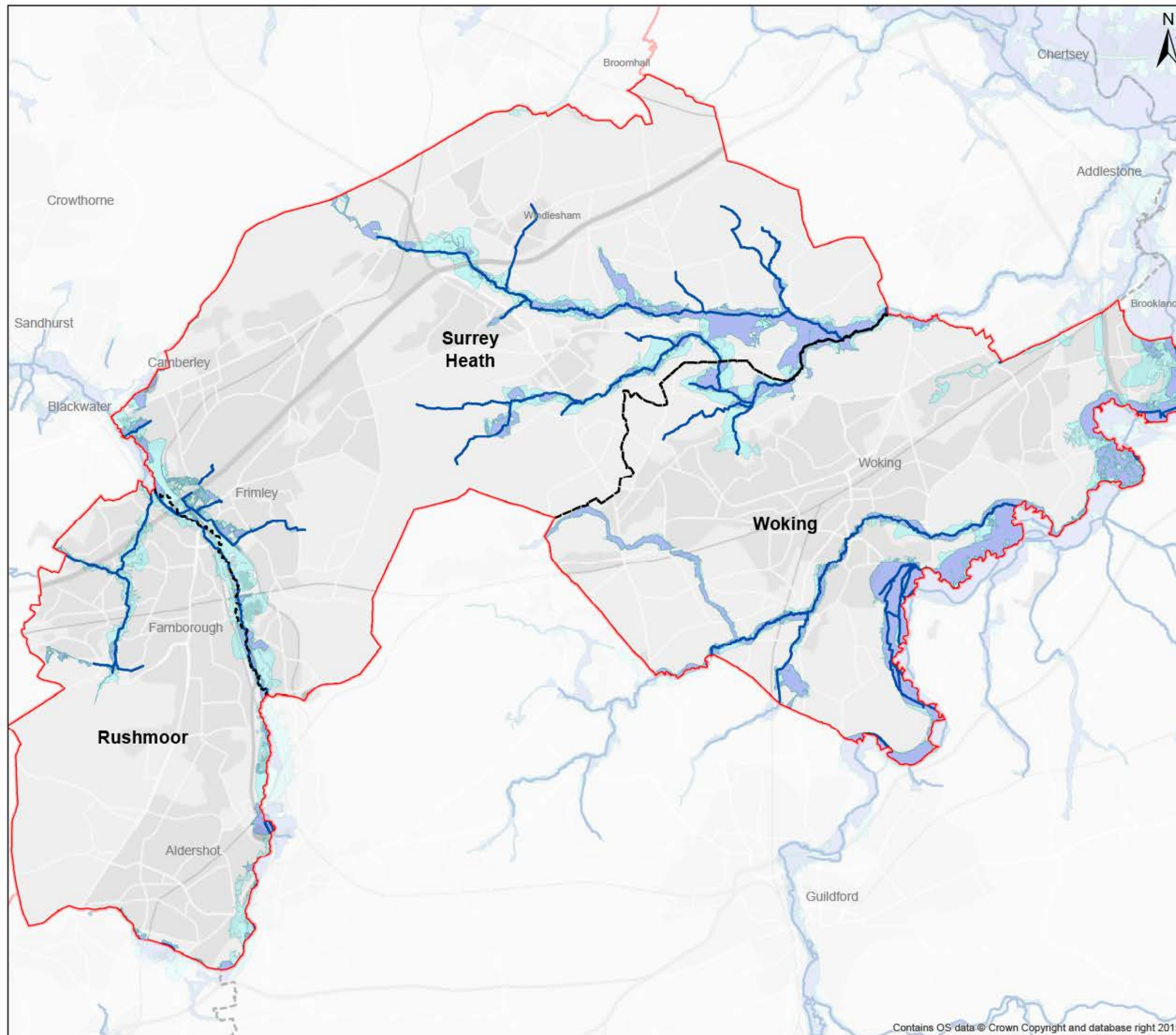
[Risk of Flooding from Surface Water](#)

[Susceptibility to Groundwater Flooding](#)

[Historic Flooding](#)

[Return to the overview map](#)





# Surrey Local Flood Risk Management Strategy

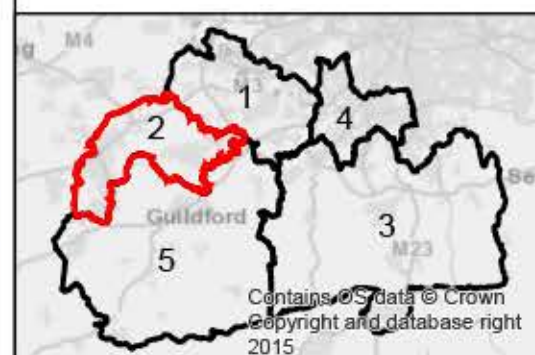
## Risk of Flooding from Rivers

### Area 2: Lower Wey

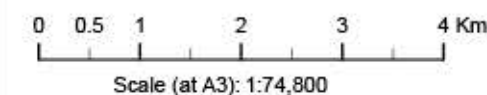
#### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Main River
- Flood Zone 3
- Flood Zone 2

Please note, areas outside of Flood Zone 2 or 3 have a low probability of flooding from rivers and are known as Flood Zone 1 (< 1 in 1000 or 0.1% annual chance of flooding)



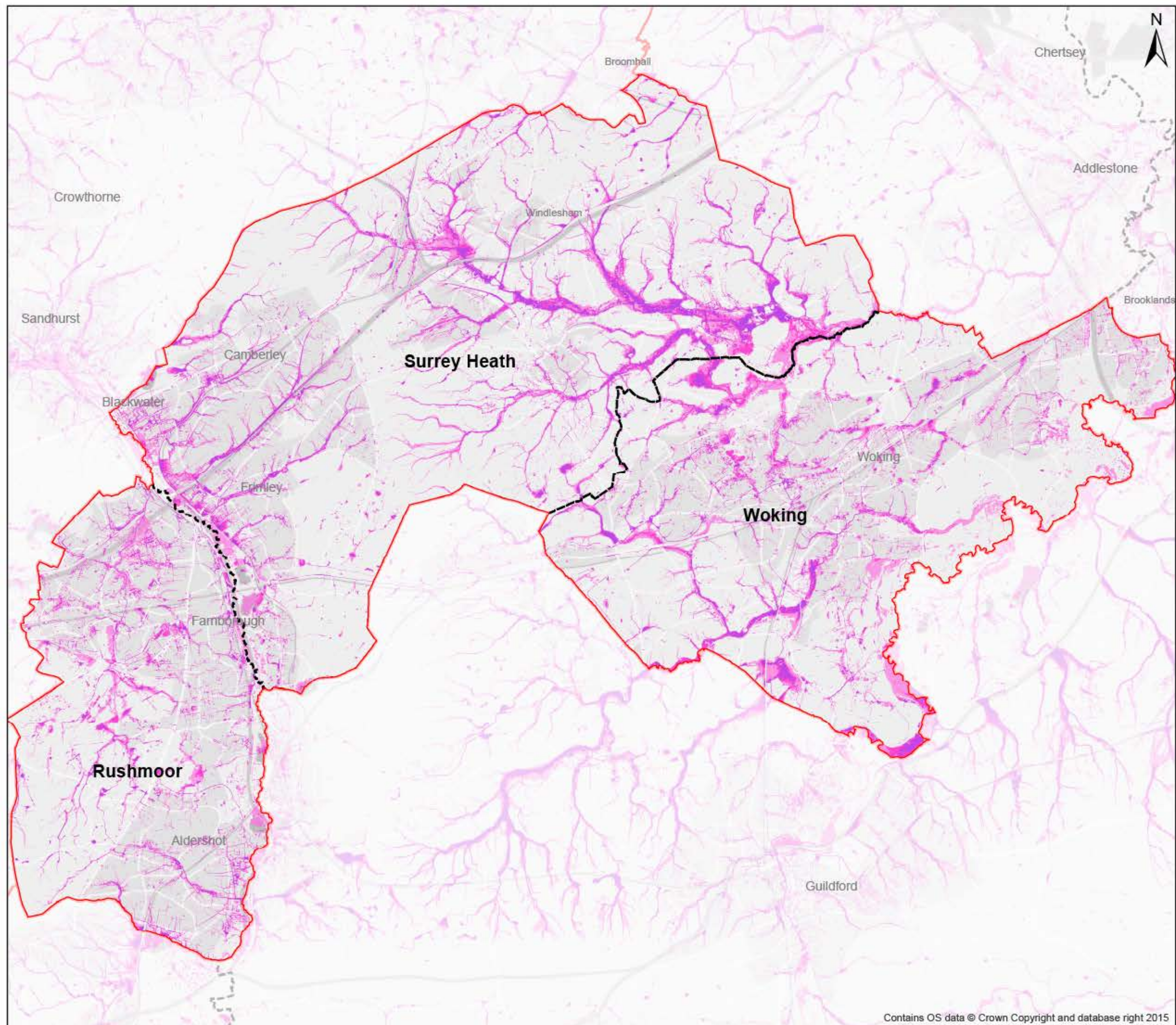
Data sources: Environment Agency, Ordnance Survey



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Purpose of Issue: For information		Revision: v0.1	
Reference: LFRMS_Fluvial_Area 2	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





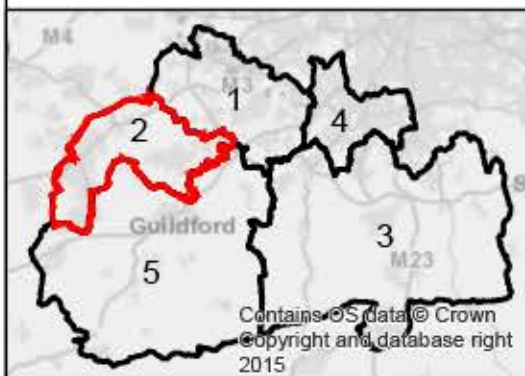
# Surrey Local Flood Risk Management Strategy

## Risk of Flooding from Surface Water

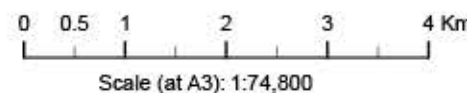
### Area 2: Lower Wey

#### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Risk of Flooding from Surface Water - 1 in 30 (3.3%) Annual Chance
- Risk of Flooding from Surface Water - 1 in 100 (1%) Annual Chance
- Risk of Flooding from Surface Water - 1 in 1000 (0.1%) Annual Chance

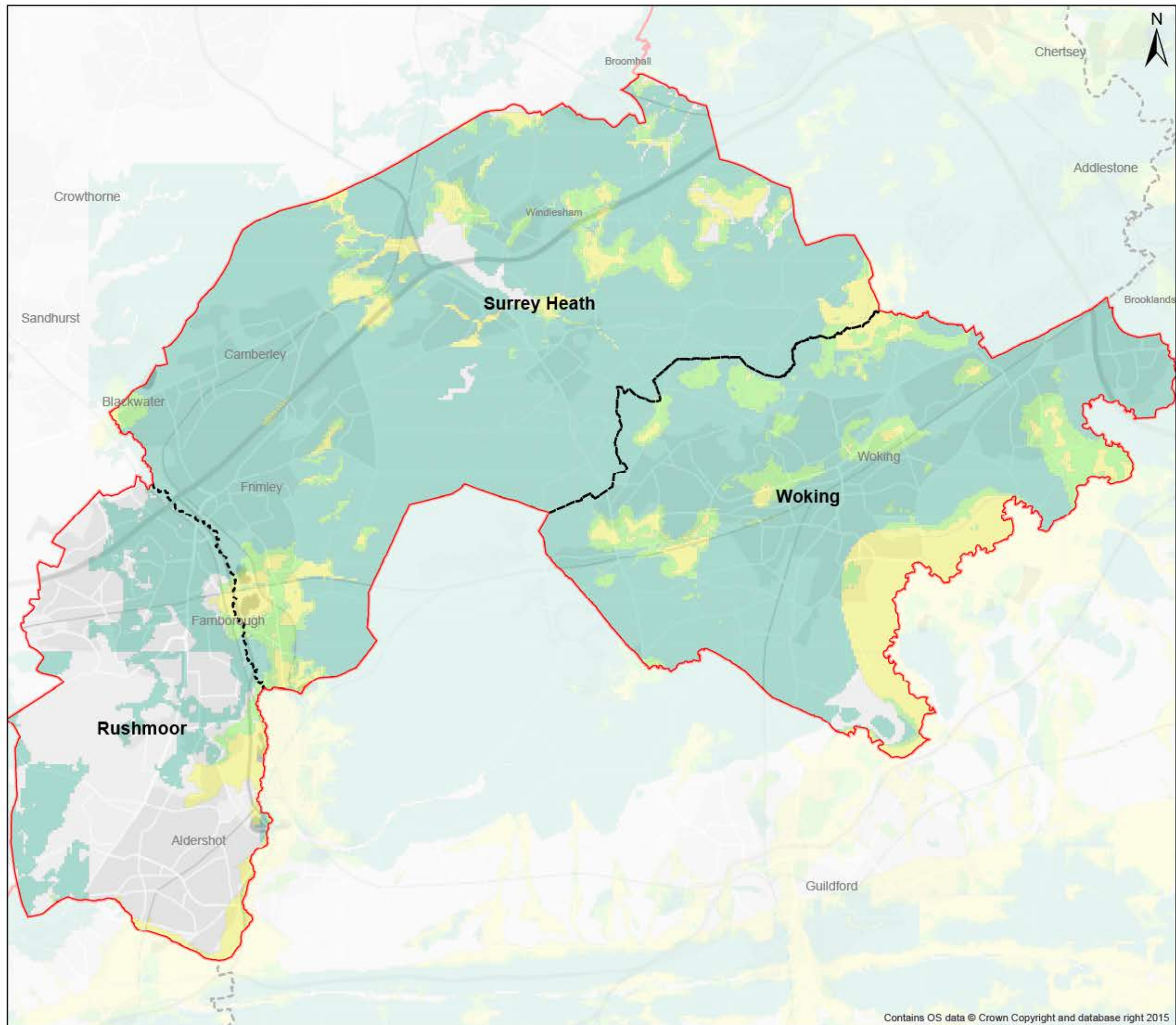


Data sources: Environment Agency, Ordnance Survey



Purpose of Issue: For information		Revision: v0.1	
Reference: LFRMS_SW_Area 2	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





# Surrey Local Flood Risk Management Strategy

## Susceptibility to Groundwater Flooding:

### Area 2: Lower Wey

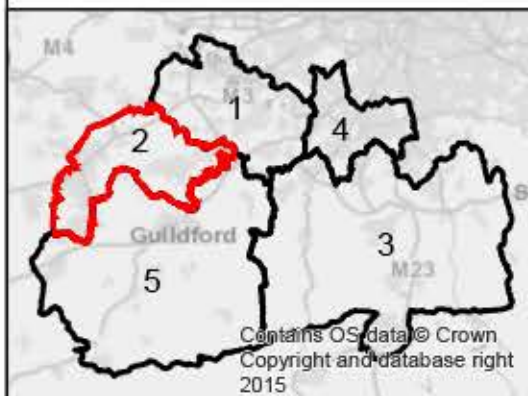
#### Key

- LFRMS Areas
- District / Borough Council Boundaries

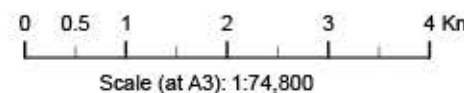
#### Susceptibility to Groundwater Flooding

- Limited potential for groundwater flooding to occur
- Potential for groundwater flooding of property situated below ground level
- Potential for groundwater flooding to occur at surface

Please note all other areas are not considered to be prone to groundwater flooding.

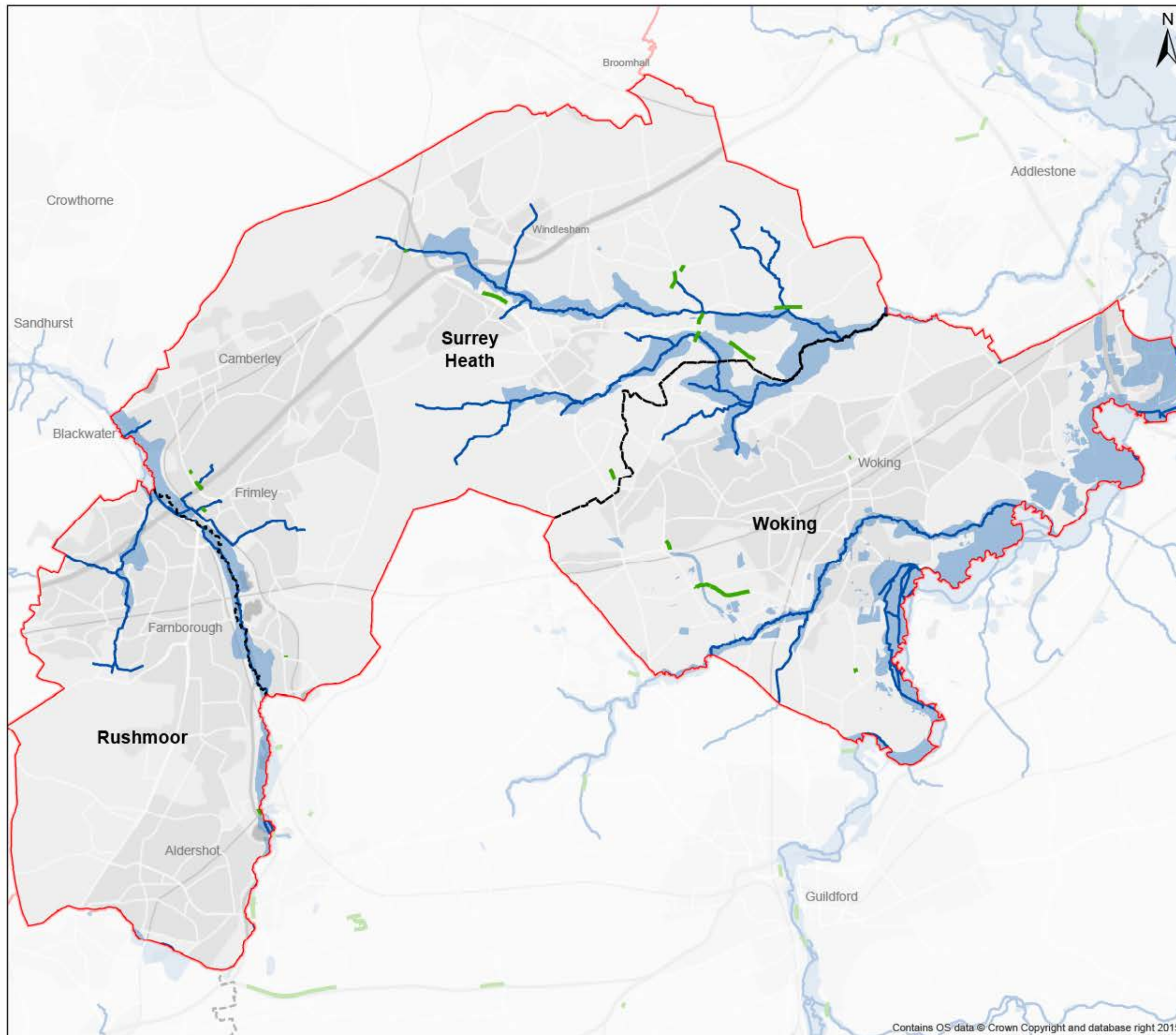


Data sources: Ordnance Survey, British Geological Survey



Purpose of Issue: For information		Revision: v0.1	
Reference: LFRMS_GW_Map 2	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





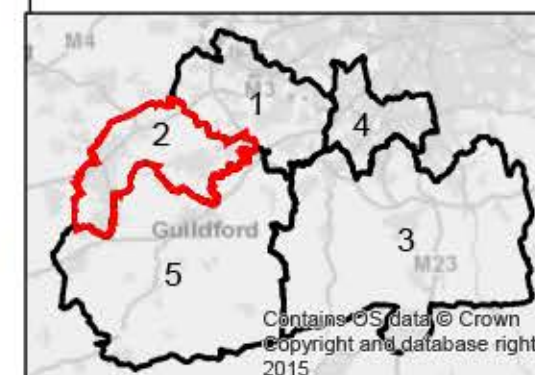
# Surrey Local Flood Risk Management Strategy

## Historic Flooding

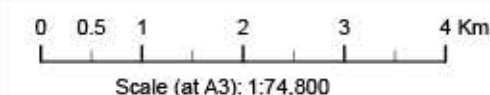
### Area 2: Lower Wey

#### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Top 100 Wetspots
- Main River
- Historic Flood Map



Data sources: Environment Agency, Ordnance Survey, Surrey County Council



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COUNTY COUNCIL

Purpose of Issue: For information		Revision: v0.1	
Reference: LFRMS_Historic_Area 2	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016



# AREA 3: Mole

[Risk of Flooding from Rivers](#)

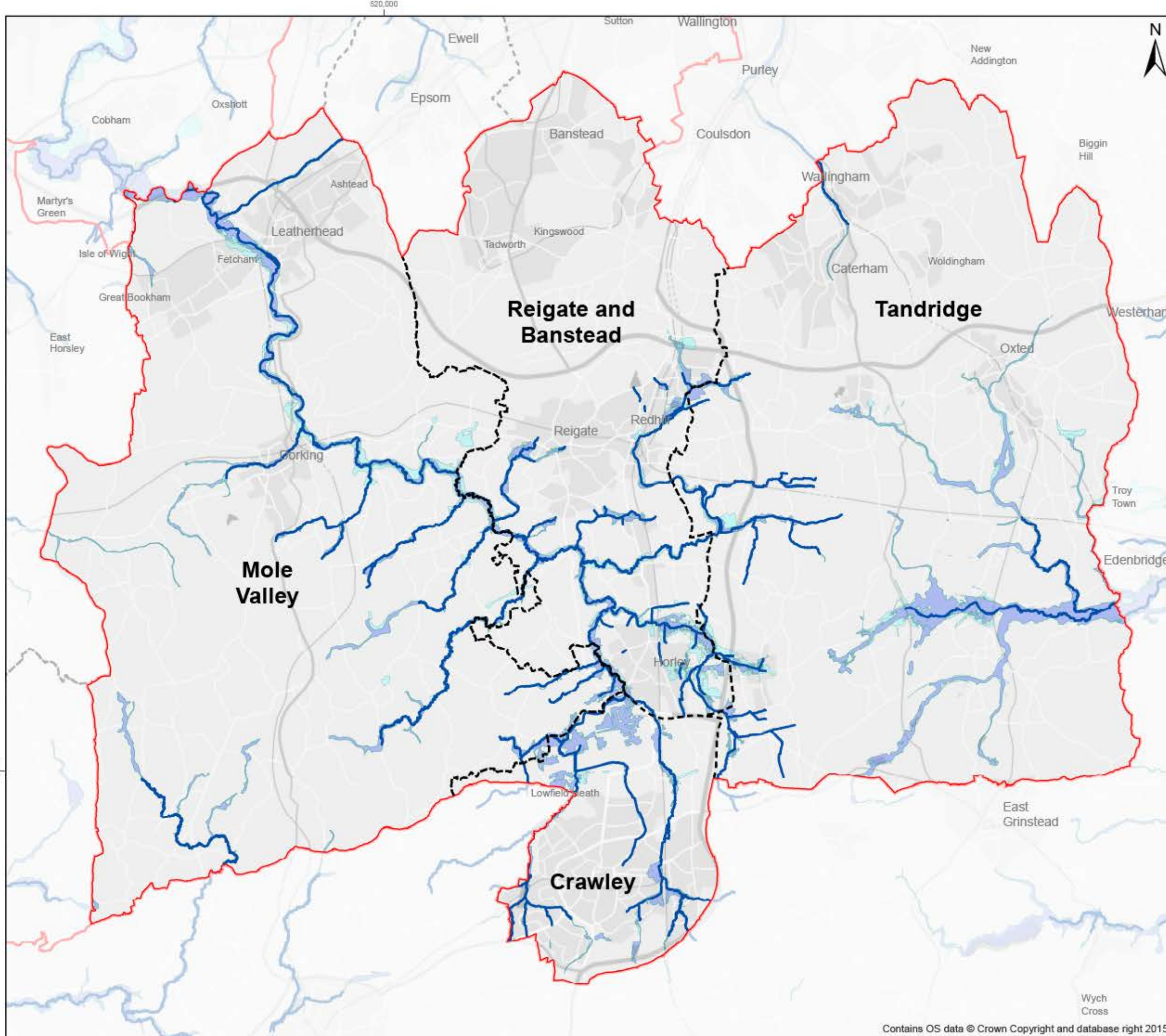
[Risk of Flooding from Surface Water](#)

[Susceptibility to Groundwater Flooding](#)

[Historic Flooding](#)

[Return to the overview map](#)





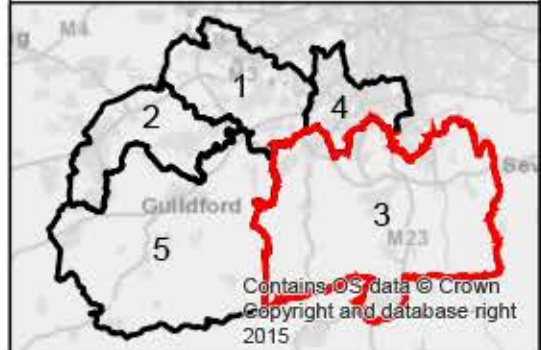
# Surrey Local Flood Risk Management Strategy

## Risk of Flooding from Rivers Area 3: Mole

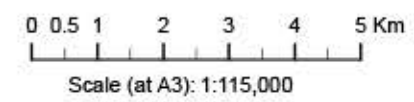
### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Main River
- Flood Zone 3
- Flood Zone 2

Please note, areas outside of Flood Zone 2 or 3 have a low probability of flooding from rivers and are known as Flood Zone 1 (< 1 in 1000 or 0.1% annual chance of flooding)

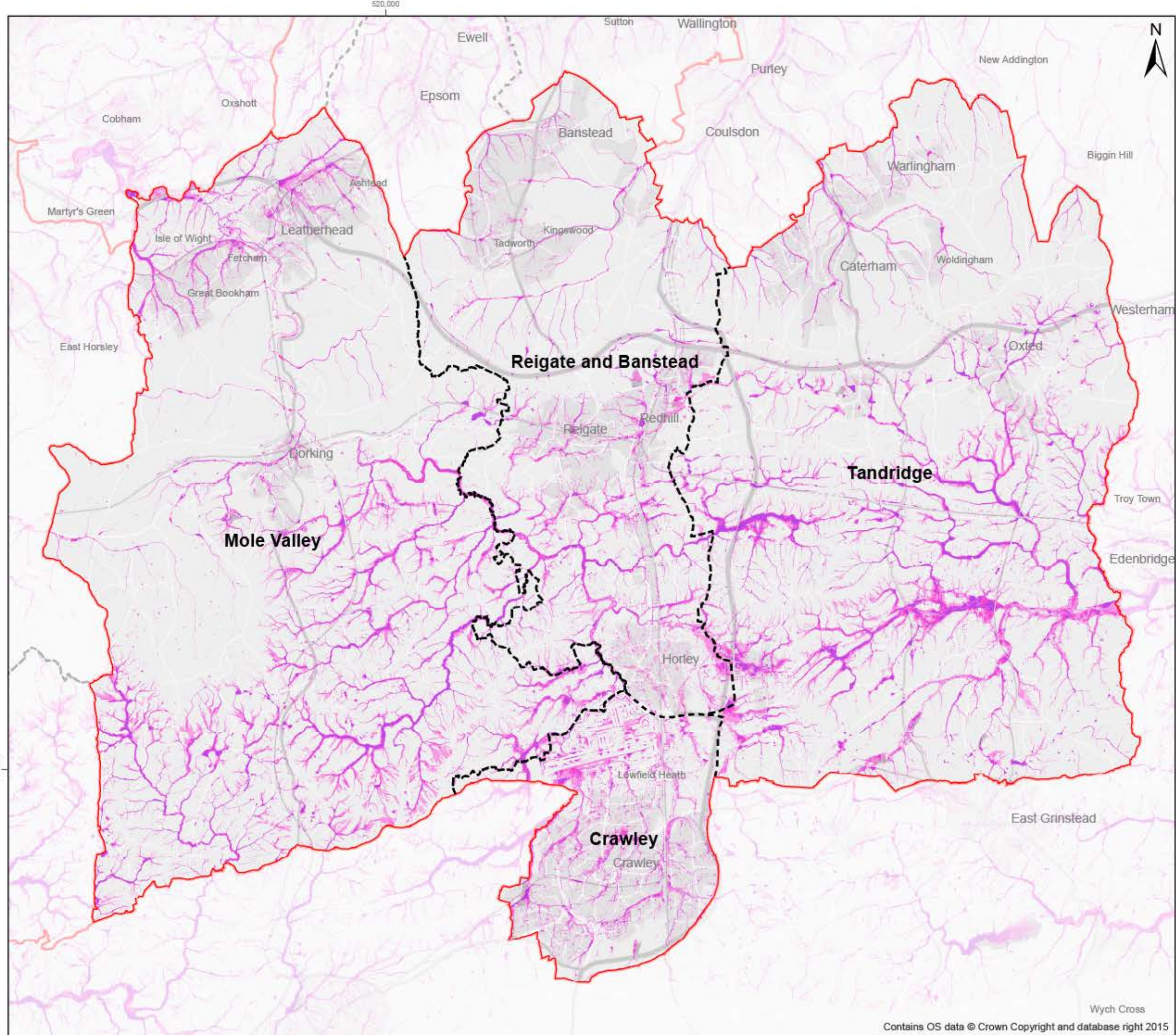


Data sources: Environment Agency, Ordnance Survey



Purpose of Issue: For information		Revision: v0.1	
Reference: LFRMS_Fluvia Area 3	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





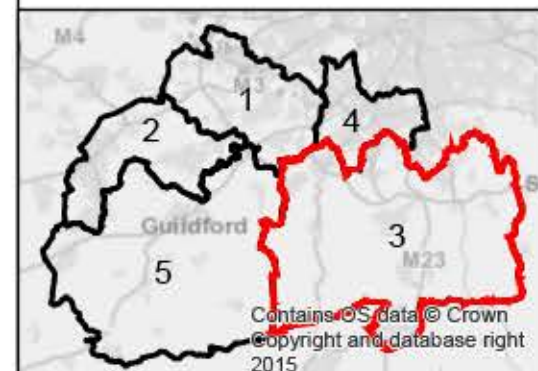
# Surrey Local Flood Risk Management Strategy

## Risk of Flooding from Surface Water

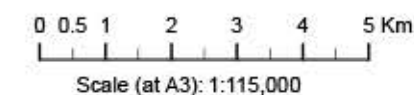
### Area 3: Mole

#### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Risk of Flooding from Surface Water - 1 in 30 (3.3%) Annual Chance
- Risk of Flooding from Surface Water - 1 in 100 (1%) Annual Chance
- Risk of Flooding from Surface Water - 1 in 1000 (0.1%) Annual Chance



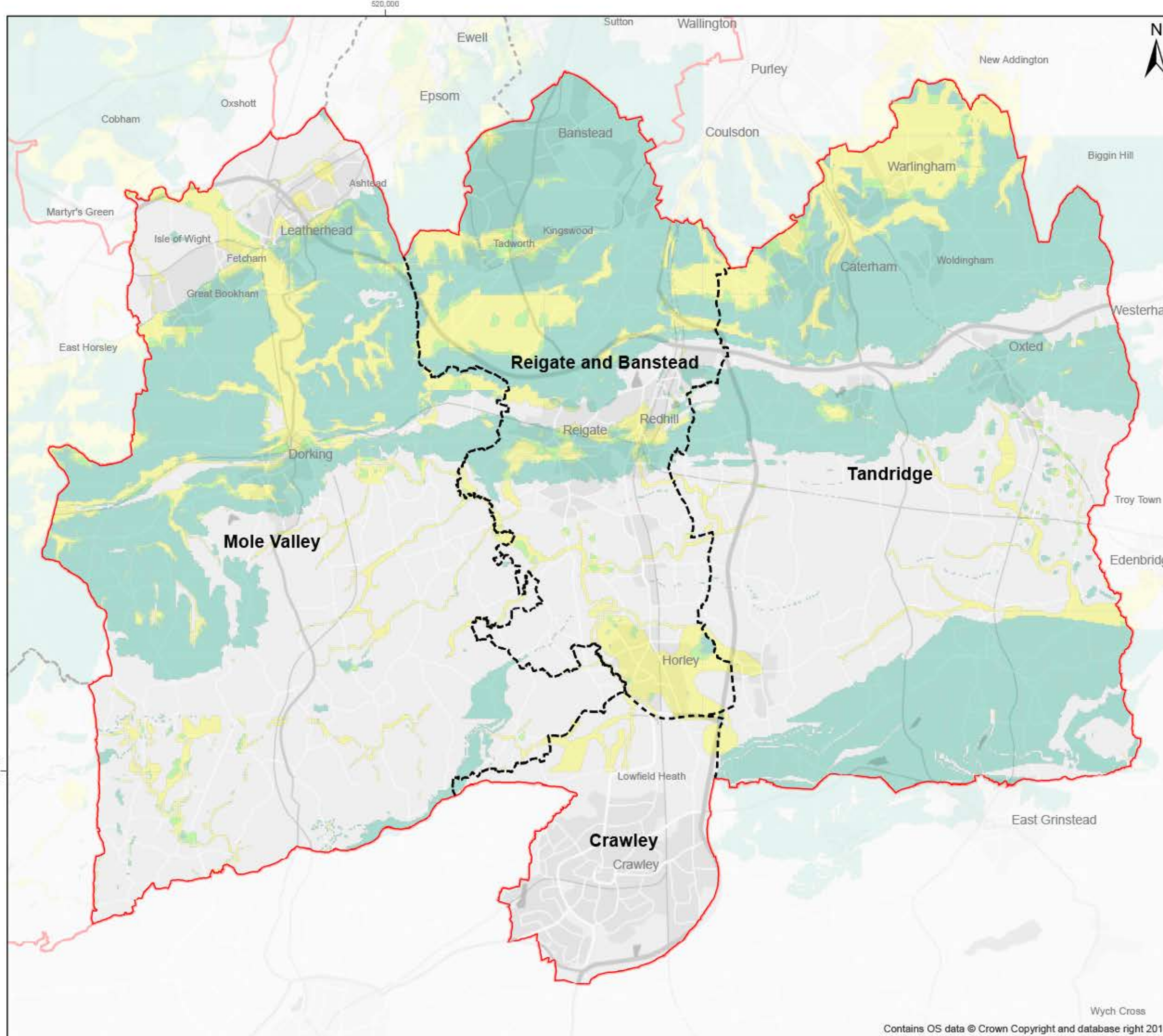
Data sources: Environment Agency, Ordnance Survey



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Purpose of Issue: For information		Revision: v0.1	
Reference: LFRMS_SW_Area 3	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





# Surrey Local Flood Risk Management Strategy

## Susceptibility to Groundwater Flooding:

### Area 3: Mole

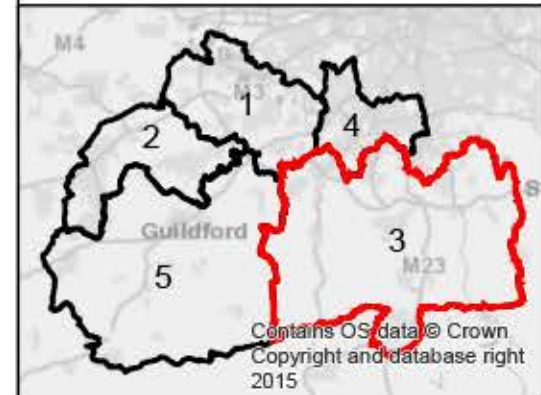
#### Key

- LFRMS Areas
- District / Borough Council Boundaries

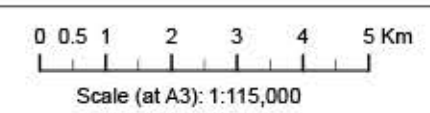
#### Susceptibility to Groundwater Flooding

- Limited potential for groundwater flooding to occur
- Potential for groundwater flooding of property situated below ground level
- Potential for groundwater flooding to occur at surface

Please note all other areas are not considered to be prone to groundwater flooding.

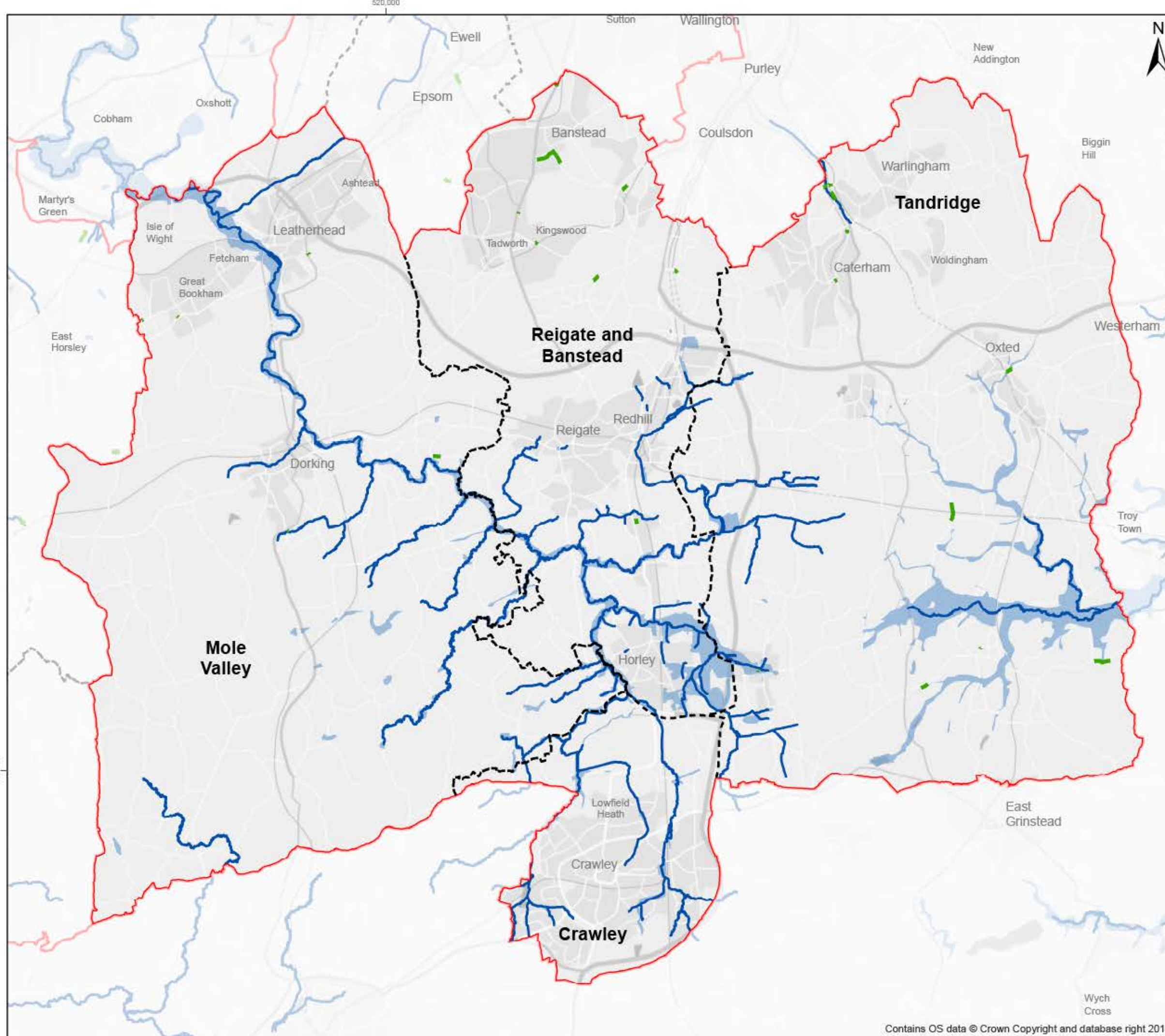


Data sources: Ordnance Survey, British Geological Survey



Purpose of Issue: For Information		Revision: v0.1	
Reference: LFRMS_GW_Map 3	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





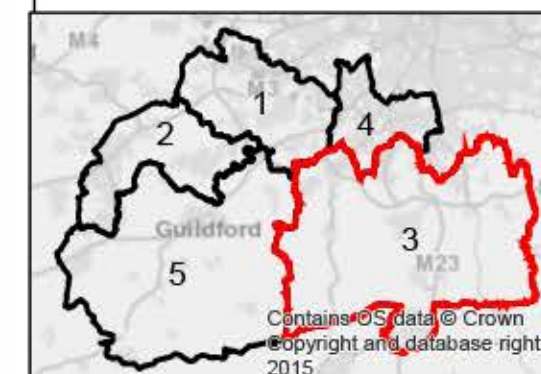
# Surrey Local Flood Risk Management Strategy

## Historic Flooding

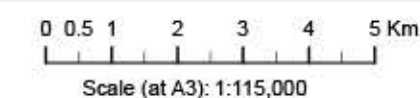
### Area 3: Mole

#### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Top 100 Wetspots
- Main River
- Historic Flood Map



Data sources: Environment Agency, Ordnance Survey, Surrey County Council



Purpose of Issue: For information		Revision: v0.1	
Reference: LFRMS_Historic_Area 3	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016

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# AREA 4: South London

[Risk of Flooding from Rivers](#)

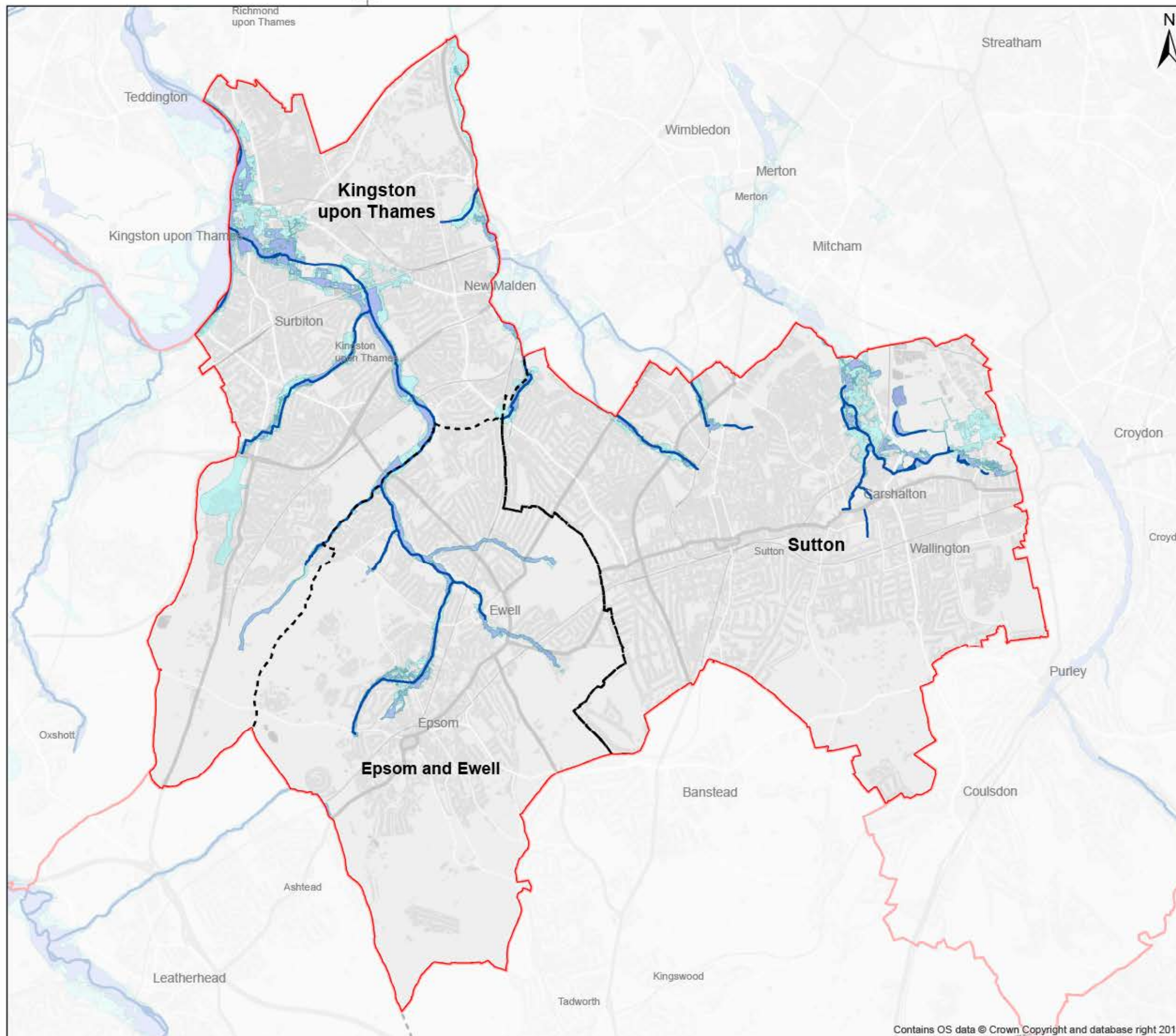
[Risk of Flooding from Surface Water](#)

[Susceptibility to Groundwater Flooding](#)

[Historic Flooding](#)

[Return to the overview map](#)





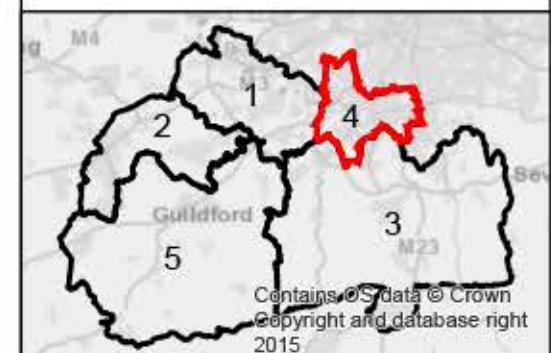
# Surrey Local Flood Risk Management Strategy

## Risk of Flooding from Rivers Area 4: South London

### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Main River
- Flood Zone 3
- Flood Zone 2

Please note, areas outside of Flood Zone 2 or 3 have a low probability of flooding from rivers and are known as Flood Zone 1 (< 1 in 1000 or 0.1% annual chance of flooding)



Data sources: Environment Agency, Ordnance Survey

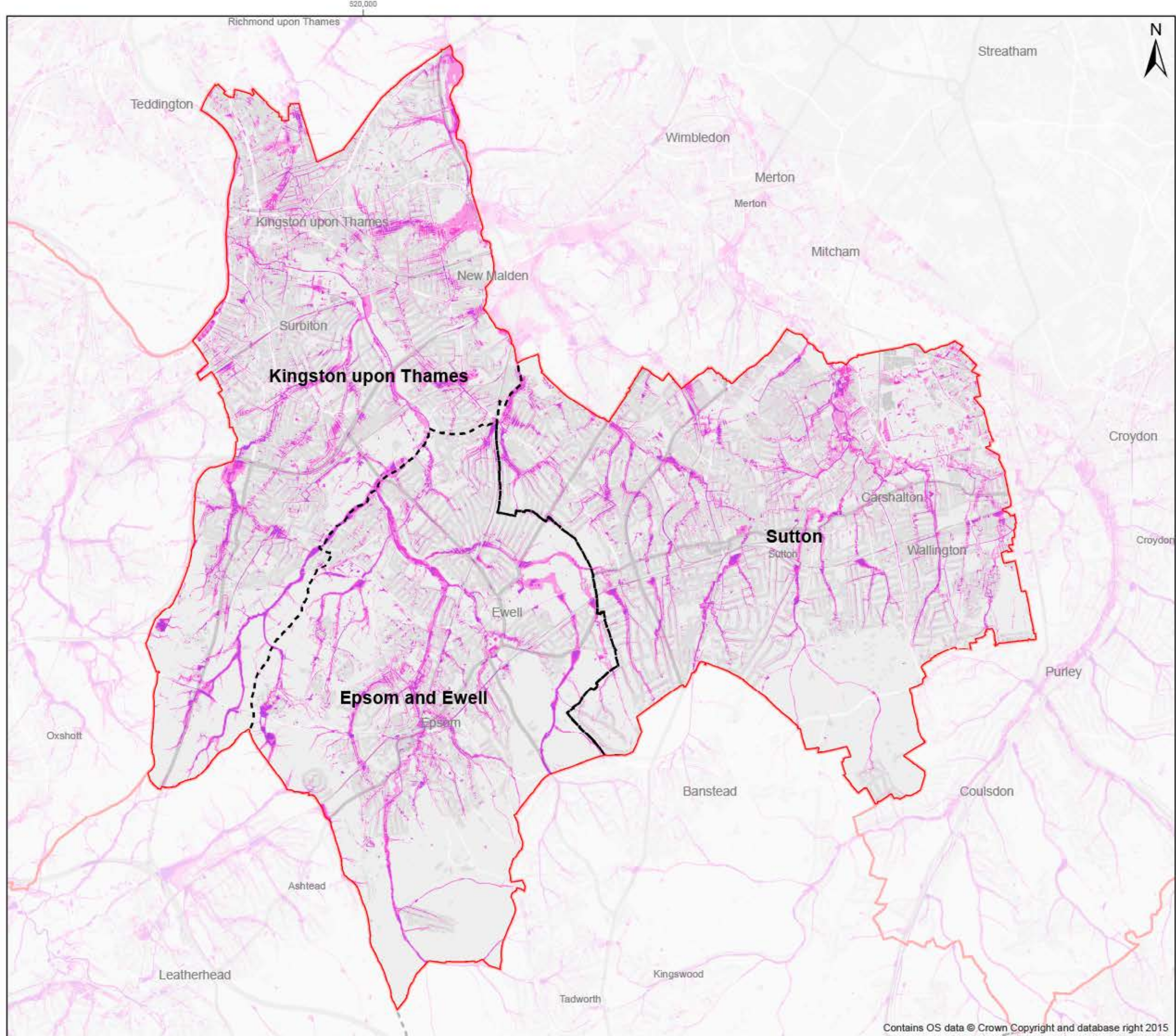
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Scale (at A3): 1:61,000



**SURREY**  
COUNTY COUNCIL

Purpose of Issue: For Information		Revision: v0.1	
Reference: LFRMS_Fluvial_Area 4	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016










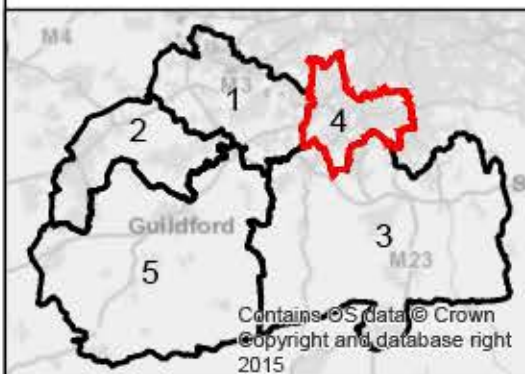
# Surrey Local Flood Risk Management Strategy

## Risk of Flooding from Surface Water

### Area 4: South London

#### Key

-  LFRMS Areas
-  District / Borough Council Boundaries
-  Risk of Flooding from Surface Water - 1 in 30 (3.3%) Annual Chance
-  Risk of Flooding from Surface Water - 1 in 100 (1%) Annual Chance
-  Risk of Flooding from Surface Water - 1 in 1000 (0.1%) Annual Chance



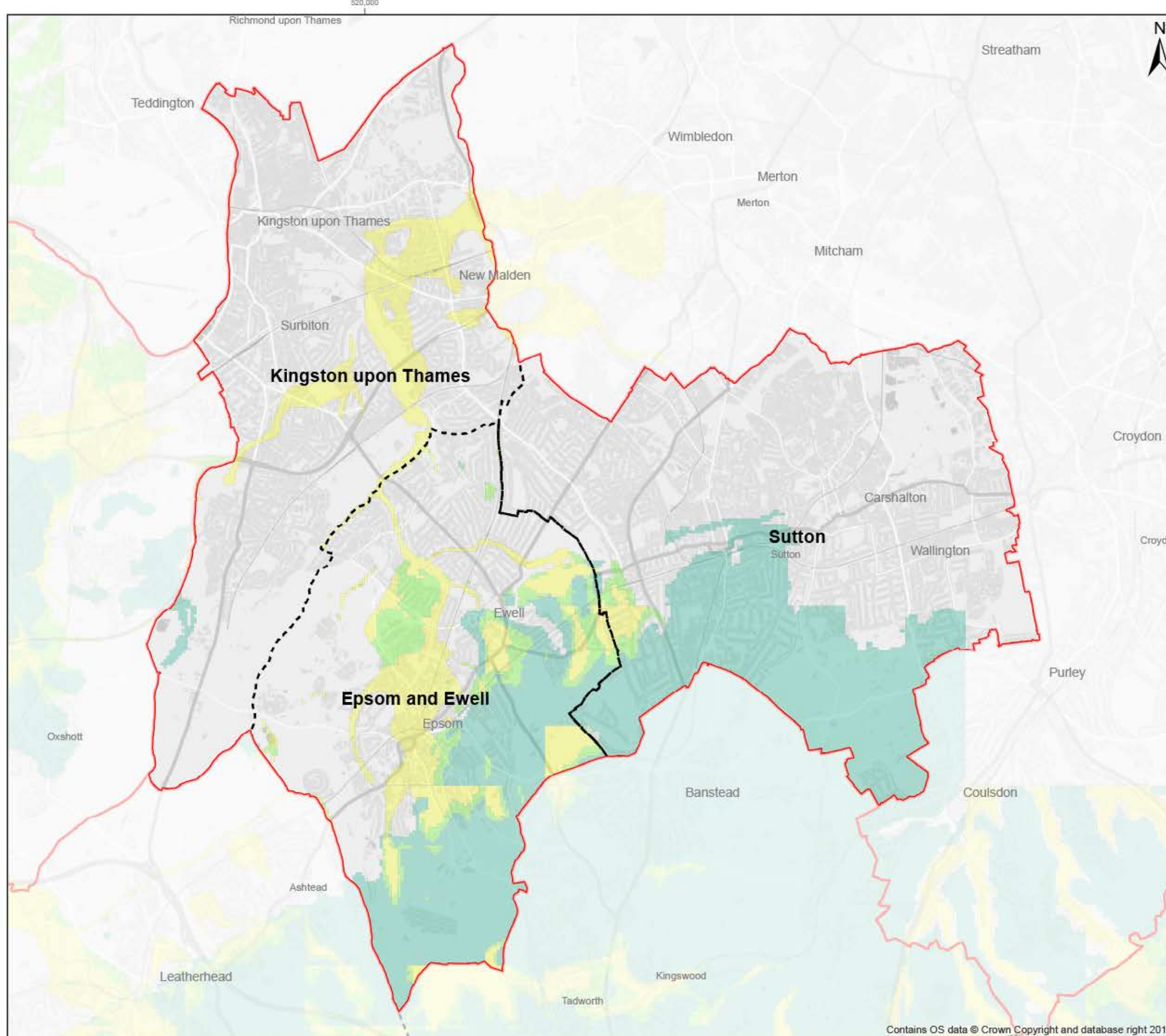
Data sources: Environment Agency, Ordnance Survey



**SURREY**  
COUNTY COUNCIL

Purpose of Issue: For information		Revision: v0.1	
Reference: LFRMS_SW_Area 4	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





# Surrey Local Flood Risk Management Strategy

## Susceptibility to Groundwater Flooding: Area 4: South London

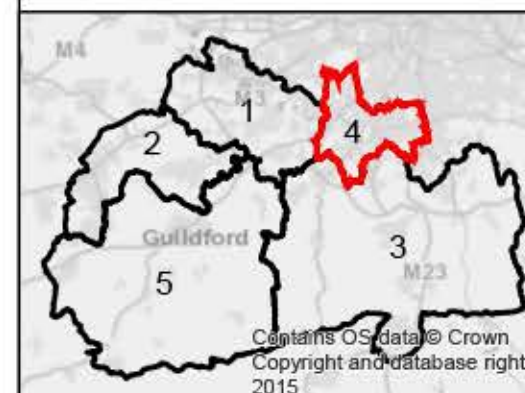
### Key

- LFRMS Areas
- District / Borough Council Boundaries

### Susceptibility to Groundwater Flooding

- Limited potential for groundwater flooding to occur
- Potential for groundwater flooding of property situated below ground level
- Potential for groundwater flooding to occur at surface

Please note all other areas are not considered to be prone to groundwater flooding.



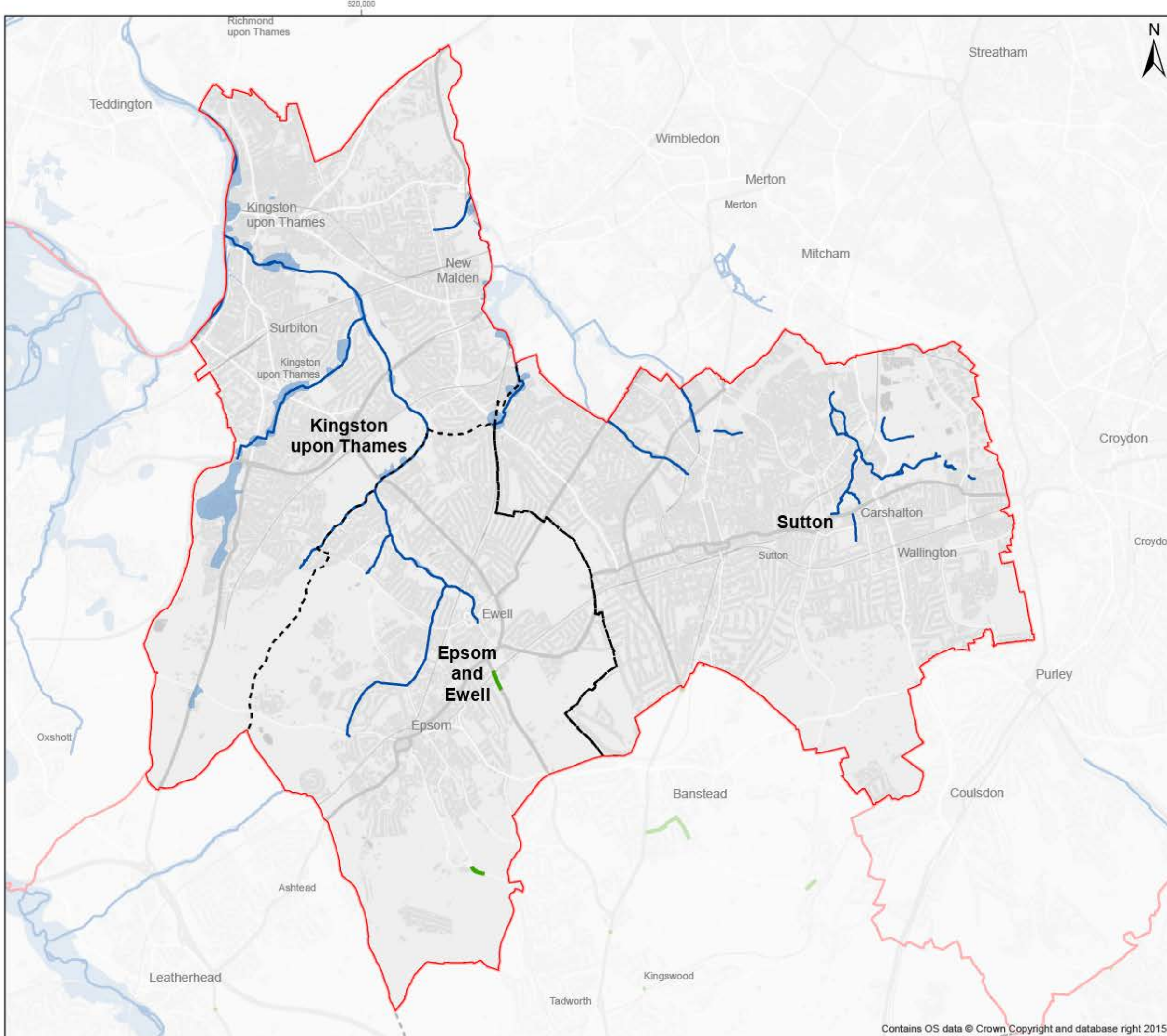
Data sources: Ordnance Survey, British Geological Survey



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COUNTY COUNCIL

Purpose of Issue: For information		Revision: v0.1	
Reference: LFRMS_GW_Map 4	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





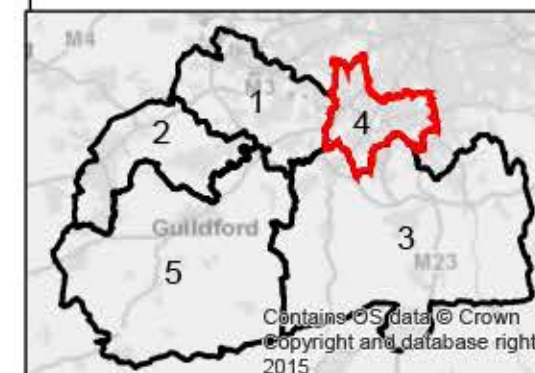
# Surrey Local Flood Risk Management Strategy

## Historic Flooding

### Area 4: South London

#### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Top 100 Wetspots
- Main River
- Historic Flood Map



Data sources: Environment Agency, Ordnance Survey, Surrey County Council

0 0.5 1 2 3 Km  
Scale (at A3): 1:61,000



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Reference: LFRMS_Historic_Area 4	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016



# AREA 5: Upper Wey

[Risk of Flooding from Rivers](#)

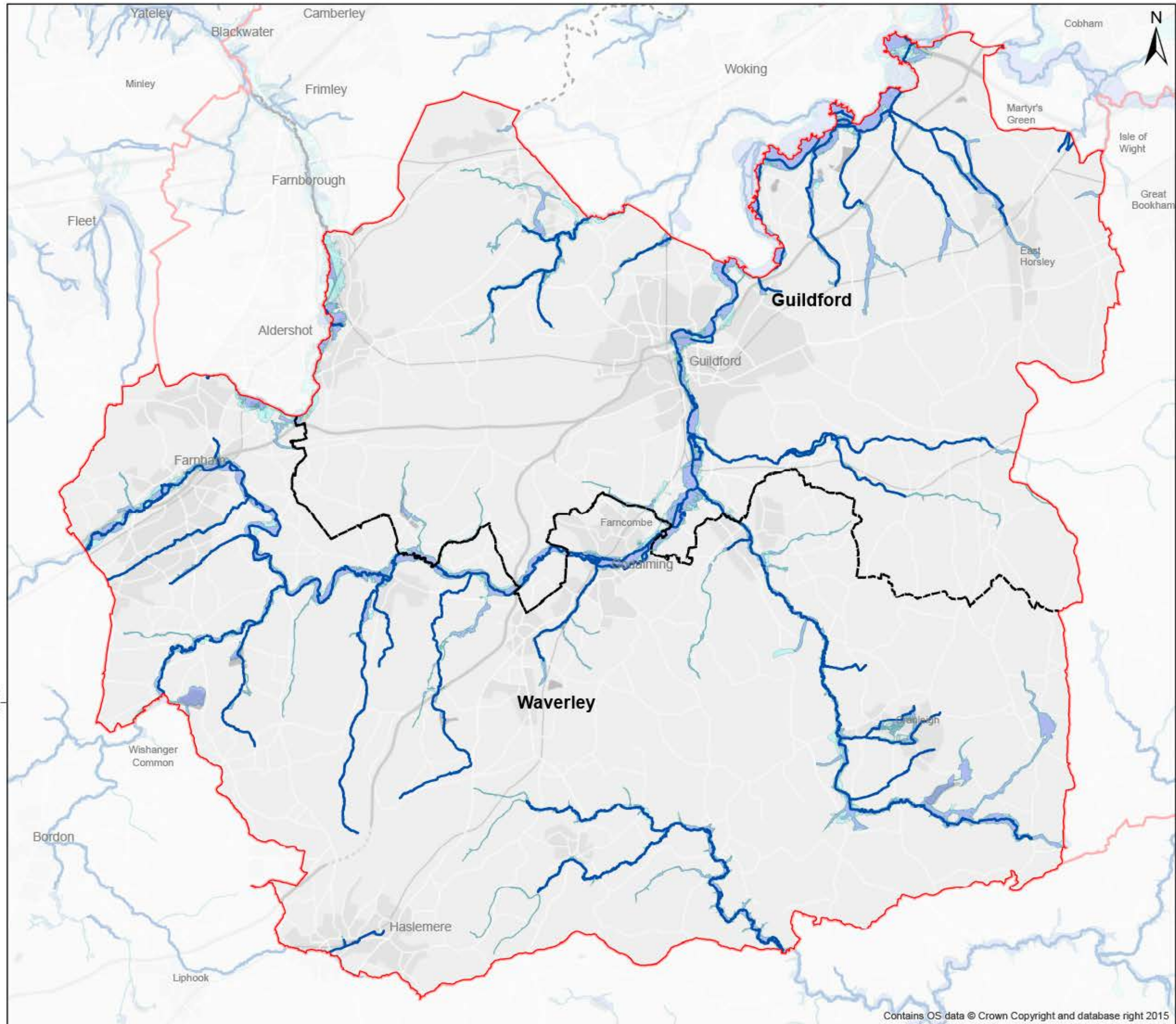
[Risk of Flooding from Surface Water](#)

[Susceptibility to Groundwater Flooding](#)

[Historic Flooding](#)

[Return to the overview map](#)





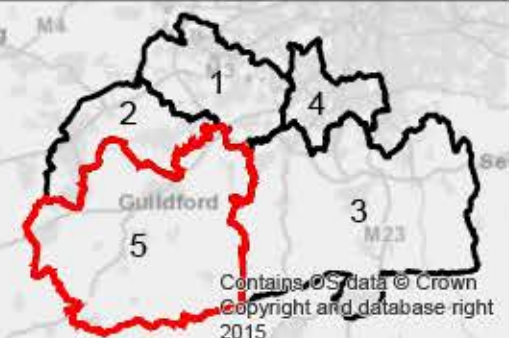
# Surrey Local Flood Risk Management Strategy

## Risk of Flooding from Rivers Area 5: Upper Wey

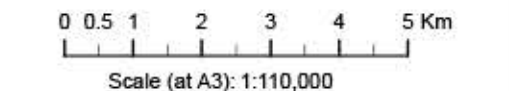
### Key

- LFRMS Areas
- District / Borough Council Boundaries
- Main River
- Flood Zone 3
- Flood Zone 2

Please note, areas outside of Flood Zone 2 or 3 have a low probability of flooding from rivers and are known as Flood Zone 1 (< 1 in 1000 or 0.1% annual chance of flooding)

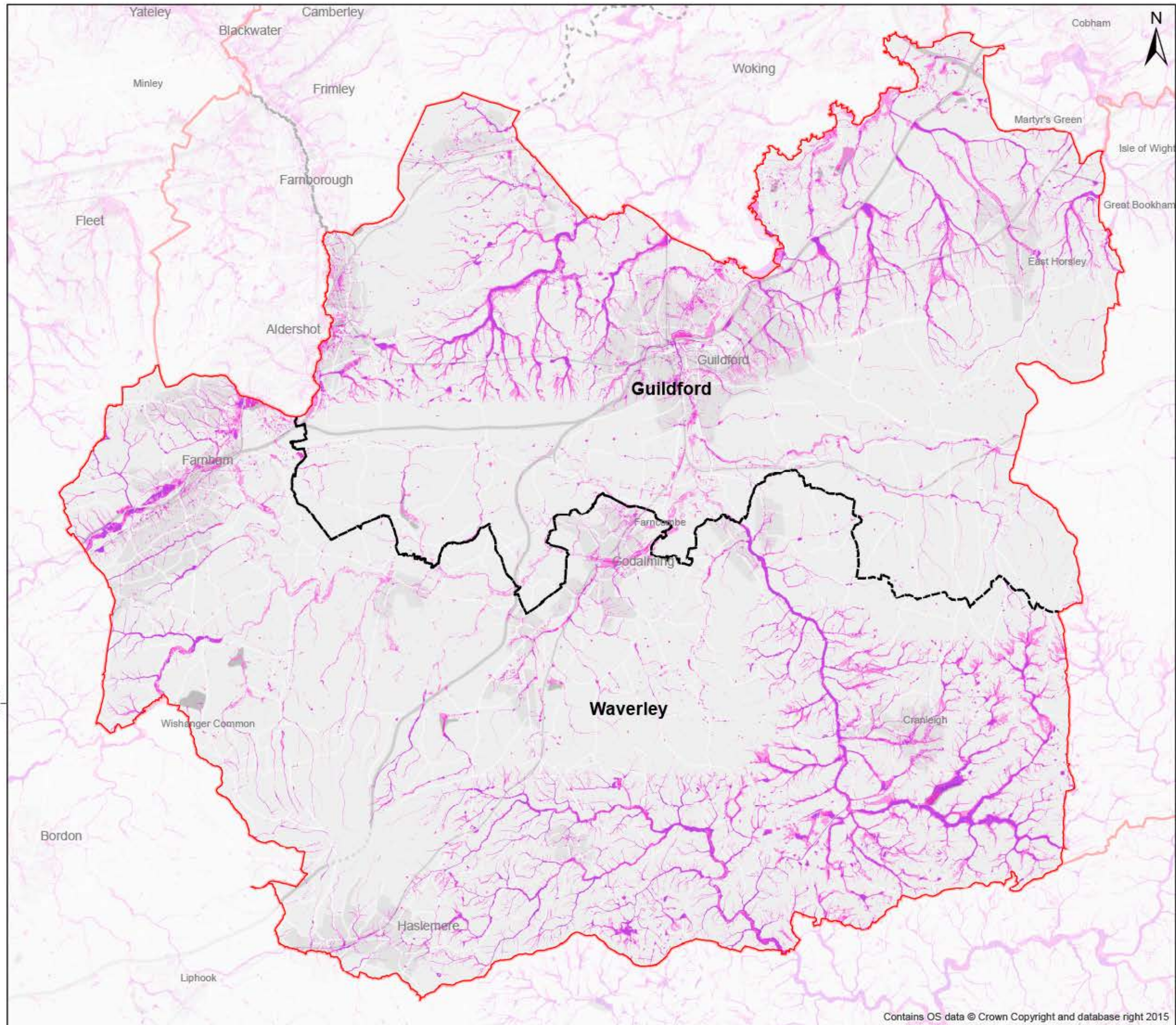


Data sources: Environment Agency, Ordnance Survey



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Reference: LFRMS_Fluvial_Area 5	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





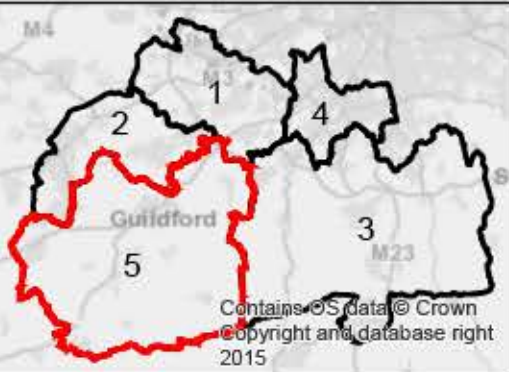
# Surrey Local Flood Risk Management Strategy

## Risk of Flooding from Surface Water

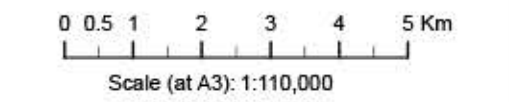
### Area 5: Upper Wey

**Key**

- LFRMS Areas
- District / Borough Council Boundaries
- Risk of Flooding from Surface Water - 1 in 30 (3.3%) Annual Chance
- Risk of Flooding from Surface Water - 1 in 100 (1%) Annual Chance
- Risk of Flooding from Surface Water - 1 in 1000 (0.1%) Annual Chance

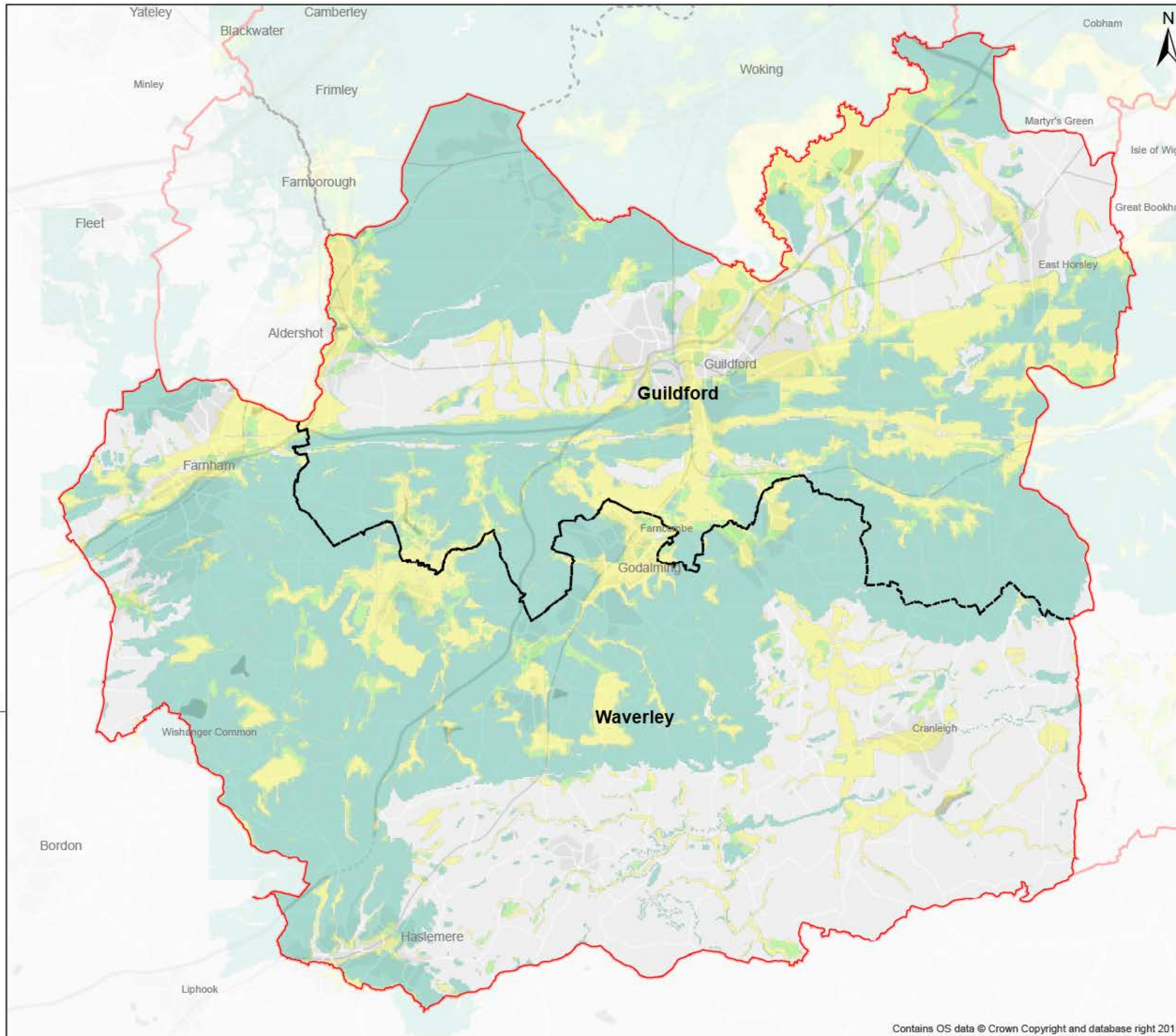


Data sources: Environment Agency, Ordnance Survey



Purpose of Issue: For information		Revision: v0.1	
Reference: LFRMS_SW_Area 5	Drawn: CNS May 2016	Checked: OL May 2016	Authorised: TP May 2016





# Surrey Local Flood Risk Management Strategy

## Susceptibility to Groundwater Flooding:

### Area 5: Upper Wey

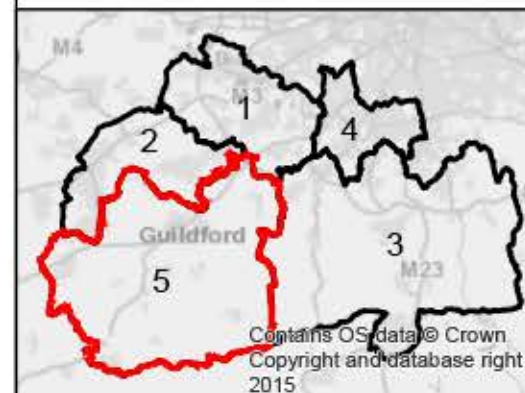
#### Key

- LFRMS Areas
- District / Borough Council Boundaries

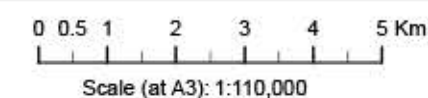
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Please note all other areas are not considered to be prone to groundwater flooding.



Data sources: Ordnance Survey, British Geological Survey



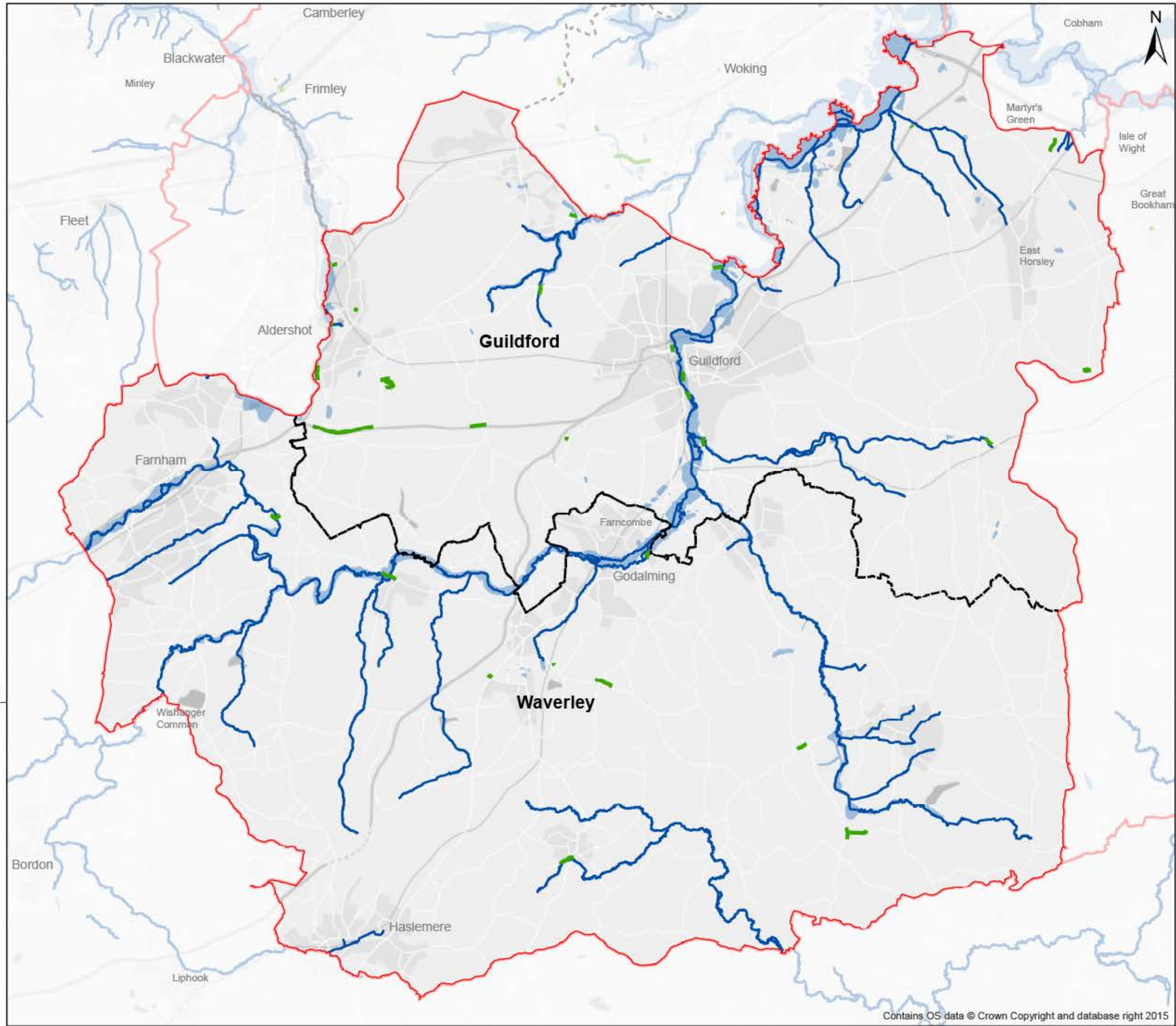
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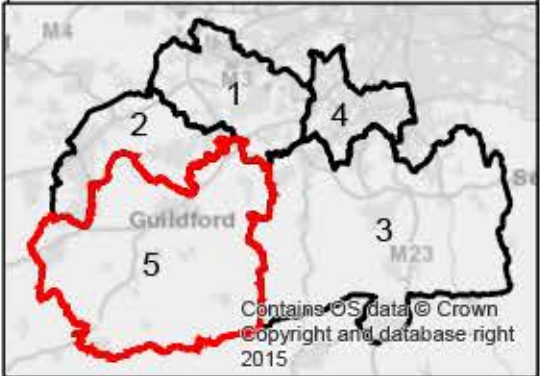
# Surrey Local Flood Risk Management Strategy

## Historic Flooding

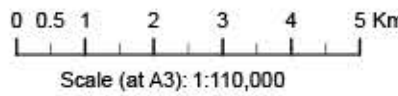
### Area 5: Upper Wey

#### Key

-  LFRMS Areas
-  District / Borough Council Boundaries
-  Top 100 Wetspots
-  Main River
-  Historic Flood Map



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If you are interested in understanding more about flooding and our work, please contact...

**[flooding.enquiries@surreycc.gov.uk](mailto:flooding.enquiries@surreycc.gov.uk)**



**SURREY**



# The Surrey Flood Risk Partnership Board

