CAPITA URS

South West London Local Flood Risk Management Strategy

Strategic Environmental Assessment Scoping Report

February 2014

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Prepared for:
South West London Flood Group

UNITED KINGDOM & IRELAND

CROYDON www.croydon.gov.uk

Royal Kingston

merton

LONDON BOROUGH OF RICHMOND UPON THAMES

Sutton

THE BRIGHTER BOROUGH Wandsworth

REVISION SCHEDULE					
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1 INTRODUCTION

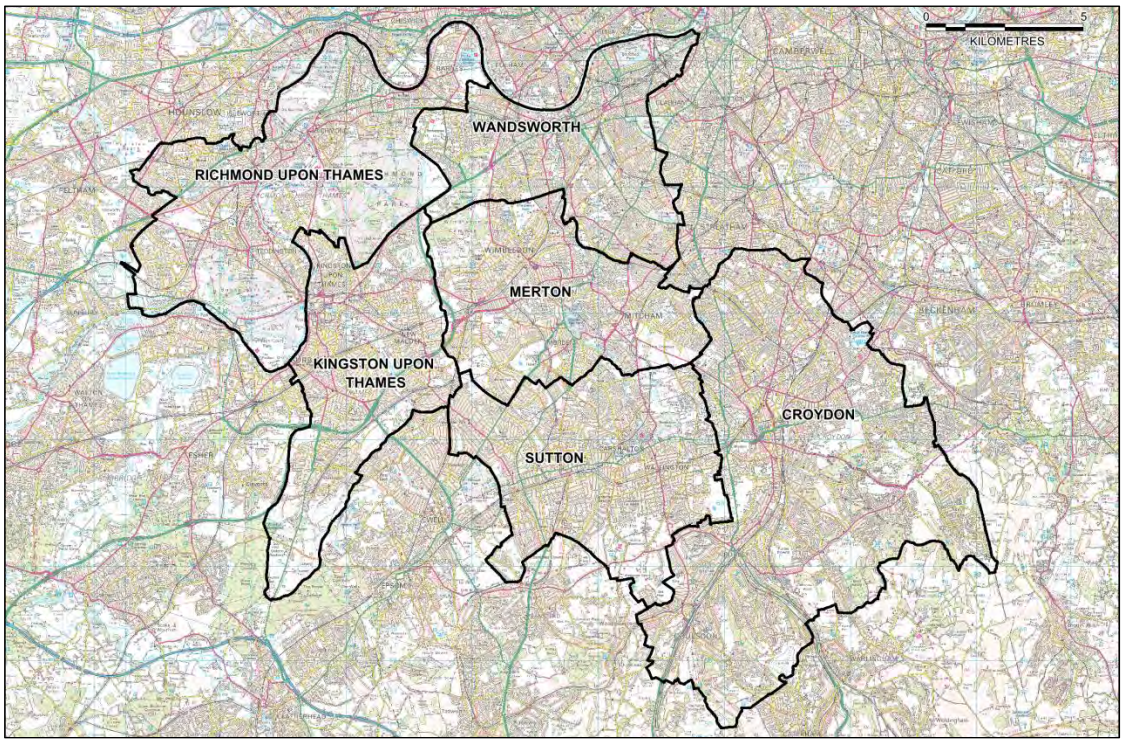
Local Flood Risk Management Strategies (LFRMSs or the 'Strategies'), are required to be produced by Lead Local Flood Authorities (LLFAs) under The Flood and Water Management Act (FWMA) (2010).

Six South West London LLFAs (the London Boroughs of Merton, Sutton, Richmond, Croydon, Wandsworth and the Royal Borough of Kingston upon Thames) have formed the South West London Flood Group) and are currently in preparation of their Strategies via a joint South West London flood Group initiative. Whilst the Strategies are being developed concurrently as part of the initiative, six separate Strategies covering each of the LLFA areas will be produced.

Guidance on the production of a LFRMS[1] states that a LFRMS is likely to require statutory Strategic Environmental Assessment (SEA).

The South West London Flood Group have therefore opted to undertake a SEA for their Strategies. Figure 1.1 shows the six LLFA areas for the South West London Flood Group which, form the study area for the SEA.

Figure 1.1: Study Area consisting of the six London Boroughs of Richmond Upon Thames, Wandsworth, Merton, Kingston Upon Thames, Sutton and Croydon. Contains Ordnance Survey Data © Crown Copyright and database right 2014.



The SEA process, culminating in the preparation of an Environmental Report, will inform the Strategies through identification of the likely significant effects of the implementation of the Strategies on relevant environmental receptors. It will also identify how the Strategies can contribute to the achievement of wider environmental objectives, including Water Framework Directive (WFD) objectives.

Guidance on the production of LFRMSs[2] recognises that LLFAs should take a proportionate approach to applying SEA to Strategies particularly when environmental effects are not evident in the early stages of plan development. As the detail of Strategies develops, SEA scope should be reviewed. The initial Strategies being developed by the SWL LLFAs are considered to be a 'framework' with high level objectives and measures aimed at facilitating improvements in how local flood risk is managed by the LLFAs and other flood Risk Management Authorities (RMAs). These Strategies do not currently consider detail of site specific flood risk management options or measures, and therefore, the scope and extent of the SEA process is commensurate with the high level nature of the Strategies.

1.1 SEA Scoping Report

This Scoping Report has been produced for the Strategies combined. It sets out the framework for undertaking a SEA for the Strategies, together with the scope of the assessment, evidence base and review of related plans, programmes and policies to inform that assessment. This Scoping Report will be subject to statutory consultation with the Environment Agency (EA), Natural England (NE), and English Heritage (EH). Non-statutory organisations, including the London Wildlife Trust and the Wandle Trust will also be consulted.

The key purpose of this report is to scope and agree with consultees the environmental issues that may be significantly affected by implementing the Strategies, such that they can be used to feedback into the development of each of the Strategies' objectives and measures.

Following the consultation process, feedback will be used to develop six separate Environmental Reports to support and inform each of the six LLFA Strategies being developed.

2 Local Government Association (2011) Framework to Assist the Development of the Local Strategy for Flood Risk Management.

2 THE SOUTH WEST LONDON STRATEGIES

2.1 Overview

The Flood and Water Management Act (2010) requires the EA to prepare a National Flood and Coastal Erosion Strategy. This describes what needs to be done by a range of organisations (including local authorities) to reduce the risk, and manage the consequences of, flooding and coastal erosion.

The National Flood and Coastal Erosion Strategy identifies each of the six London Borough councils of Merton, Sutton, Richmond, Croydon, Wandsworth and the Royal Borough of Kingston upon Thames as an LLFA, giving each Borough a strategic role in overseeing the management of local flood risk within its area. As an LLFA, each Borough is required by the Act (2010) to produce a Strategy (LFRMS) which must be maintained, applied and monitored. The purpose of a Strategy is to guide the management of local flood risk within each Borough, reflecting local circumstances such as the level of risk and potential impacts of local flooding.

The Strategies are high level, statutory documents which set out the approach to limiting the impacts of local flooding within each of the SWL Boroughs. They also promote greater partnership working arrangements between those organisations with a responsibility for managing local flood risk (the RMAs) and provides a strategic framework within which the RMAs should work. They are 'living documents' and will be regularly reviewed.

2.1.1 Technical Scope of a LFRMS

To determine the scope of the SEA, it is important to consider the technical scope of the Strategies and what they aim to achieve. The primary focus of the Strategies is on management of 'local' flooding sources which are within the remit of LLFAs. Local sources include surface water, groundwater and ordinary watercourses (streams, ditches, ponds and lakes).

An important distinction in the Study area is that flooding from main Rivers and tidal sources is the responsibility of the Environment Agency and not directly subject to influence by the Strategies. However, it should be noted that the Strategies should also seek to ensure that local flood risk is not considered in isolation from Main River and tidal flood risk and where possible it makes the link to the work of other agencies responsible for flood management.

The Strategies will provide guidance on all sources of flood risk (including Main Rivers, sewers and coastal) in order to better understand the interactions and risk posed to communities which in turn will enable LLFA's to deliver management measures that provide the greatest benefit and resilience. Detailed flood risk management measures will be provided for 'local' flood risk, and a signpost to relevant documents and RMAs will be provided for all other sources of flood risk.

2.1.2 SEA and LFRMS

The SEA process will be undertaken for each individual Strategy, culminating in the preparation of six Environmental Reports. The Reports will inform the preferred long-term Strategies through the identification of the likely significant effects of the implementation of each Strategy on relevant environmental receptors. A SEA is being undertaken in parallel to ensure that environmental considerations inform the development of objectives and measures for each of the six Strategies, and that opportunity for environmental improvement are identified and included.

The scoping process is, however, being undertaken for all six Strategies combined and reported for consultation in this Scoping Report document.

2.2 Main Local Flood Risk Issues

During the flood event of summer 2007 intense periods of rainfall exceeded the capacity of the existing drainage systems, causing significant overland flow and ponding of surface water in low lying areas across the six Boroughs. Drainage systems were overwhelmed in several locations, commercial properties were affected by bow-wave wash from vehicles and basement properties were flooded. In addition, widespread damage was caused to schools, commercial properties and disruption was experienced on the transport systems connecting the Boroughs with central London.

Merton Council reported significant flooding during the flood event of summer 2007 in the areas of West Barnes, Morden, Mitcham, Colliers Wood, Tooting Graveney and Summerstown. This included flooding of the High Street in Colliers Wood which is one of the busiest roads in Merton and is the main route to St. Georges Hospital and the National Blood Service, which uses this route for most of the hospitals in Surrey, Kent and Sussex.

In the London Borough of Sutton, drainage systems were overwhelmed in several locations in 2007, 2008, 2009 and 2010 most notably in Beddington, Hackbridge, Worcester Park and Wallington. Some areas were affected by multiple sources of flood risk and complex interactions between urban watercourses, direct surface water ponding, overland flow paths and the surface water sewer system. One such example is the Hackbridge area which is susceptible to groundwater flooding, fluvial flooding from the River Wandle, surcharge of the surface water drainage system as well as direct surface water flooding from rainfall that contributes to overland flow-paths.

The London Borough of Croydon is ranked the 4th settlement in England most susceptible to surface water flooding, according to national research undertaken by Defra[3]. During the flood event of summer 2007, approximately 320 properties and 26 schools reported surface water flooding to the Council. Drainage systems were overwhelmed in several locations across the Borough in 2007, 2008, 2009 and 2010 most notably in Purley Cross, the Brighton Road and Norbury.

The Royal Borough of Kingston upon Thames, when compared to other London Borough's, historically has a relatively low risk of surface water flooding.

3 National Rank Order of Settlements Susceptible to Surface Water Flooding, Defra 2009

3 THE STRATEGIES AND SEA

3.1 The Purpose of Strategic Environmental Assessment

A SEA involves the systematic identification and evaluation of the potential environmental impacts of high-level decision-making (e.g. a plan, programme or strategy). By addressing strategic level issues, the SEA aids the selection of the preferred options, directs individual schemes towards the most environmentally appropriate solutions and locations and helps to ensure that resulting schemes comply with legislation and other environmental requirements.

The potential environmental impacts of all policies and strategy objectives must be considered before deciding which policies and objectives will be adopted. Consideration should be made with regards to both the positive and negative impacts of options on wildlife and habitats, populations and health, soil, water, air, climate factors, landscape, cultural heritage and the inter-relationships between these receptors.

Flood risk management strategies are likely to play a role in setting part of a framework for future development and so it is recommended (Defra, 2006a) that plan-making authorities assess policies using the approach described in the Directive. The main aim of the EU Directive is to "provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development". The Directive is transposed into English law via the Environmental Assessment of Plans and Programmes Regulations (SI 1633, 2004).

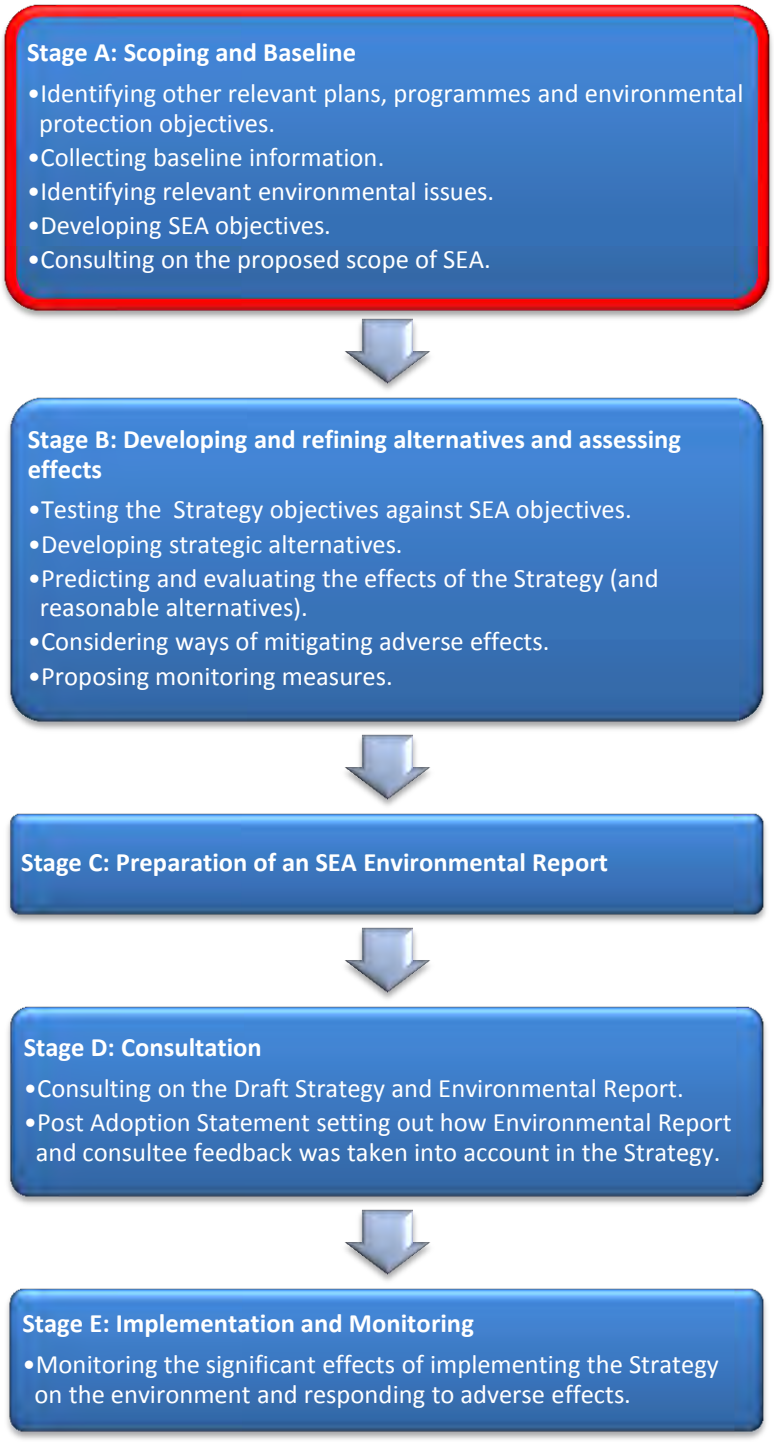
The methodology for undertaking this assessment will follow Communities and Local Government's (CLG) Guidance on SEA[4].

3.2 Stages in the SEA process

CLG Guidance identifies five key stages in the SEA process, as set out in Figure 3.1.

4 Local Government Association (2011) Framework to Assist the Development of the Local Strategy for Flood Risk Management.

Figure 3.1: Relationship between SEA stages.



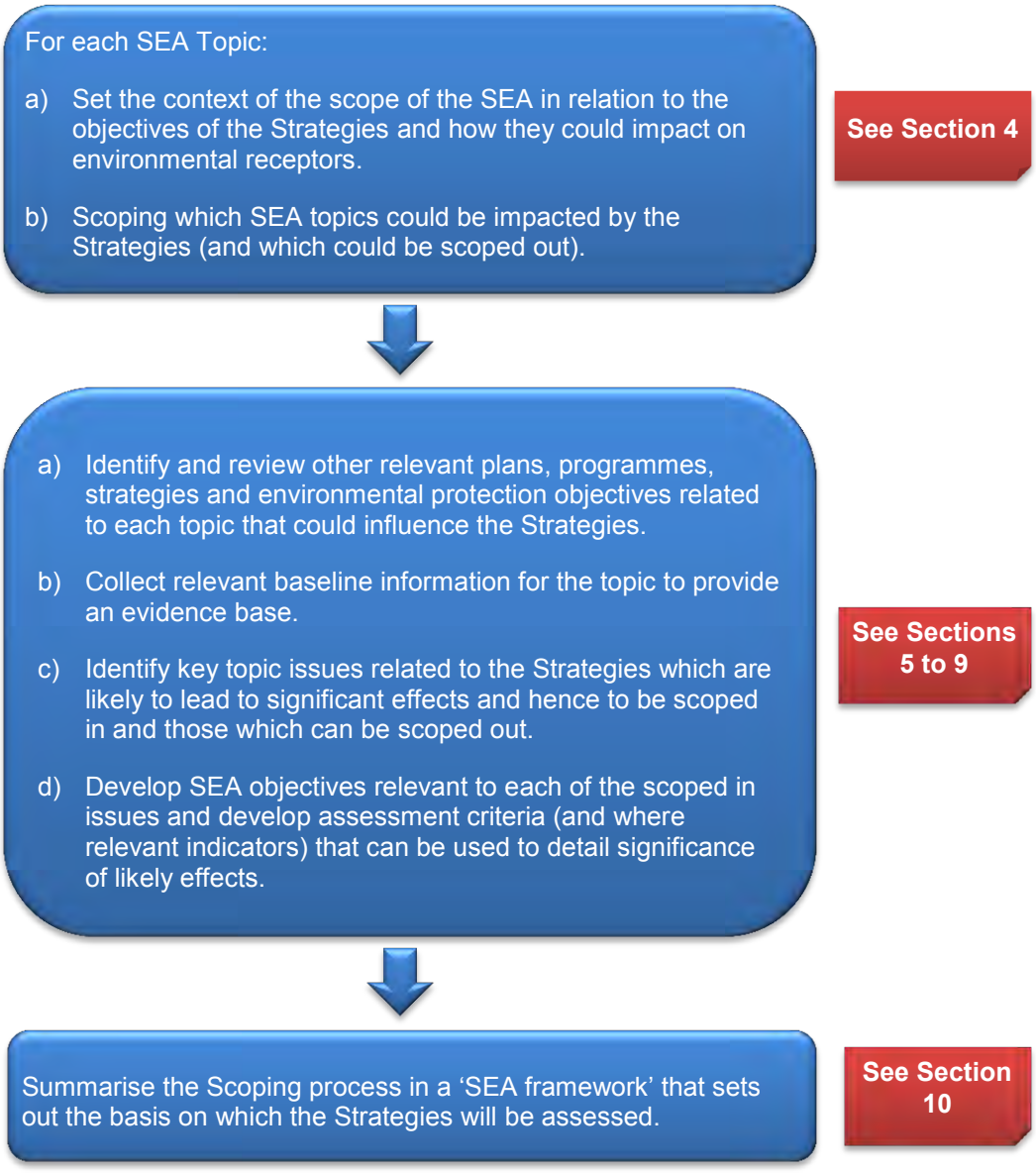
This SEA Scoping Report documents Stage A of the SEA process, as highlighted in red in Figure 3.1.

The final SEA output is an Environmental Report that contains all the relevant information to meet the requirements of Regulation 12(3) of the SEA Regulations.

3.3 Purpose of the Scoping Stage in SEA

The purpose of this Scoping Stage within the SEA is to set the context and objectives, determine key SEA topics, establish the baseline for relevant SEA topics and identify the scope of the assessment. There are several stages to the Scoping process, and this Scoping Report has been set out to reflect these stages.

Figure 3.2: Steps in Stage A: Scoping and Baseline.



This report (the SEA Scoping Report) relies on the elements in Figure 3.2 to enable consultees to feed into the establishment of the scope of the SEA.

3.4 Water Framework Directive (WFD) Assessment

The European Water Framework Directive (WFD) 2000/60/EC[5], which was transposed into UK law in 2003 by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003, represents a strategic planning process to manage, protect and enhance the condition of water bodies.

It establishes a framework for the protection of water bodies including terrestrial ecosystems and wetlands directly dependent on them (See Appendix A for details of WFD aims).

Plans and strategies which could influence water body condition should consider WFD objectives. Although a formal WFD assessment (WFDa) is not a statutory requirement of the Strategies, WFD requirements are being considered as part of the SEA process, including where opportunities to improve WFD status exist.

3.5 Related plans, programmes and strategies

The SEA Directive requires that the SEA includes information on the relationship of the Strategy with other relevant policies, plans and programmes (Annex I(a)), as well as environmental protection legislation at international, national and local levels.

A review of these documents has been undertaken in order to identify any potential inconsistencies or constraints between these documents and the Strategies and to identify opportunities for environmental enhancement. Appendix B provides a summary of the London Plan (2011), its vision and objectives. Appendix D provides an inventory of the reviewed documents which were considered to have a bearing on the objectives of the Strategies and which have been used to scope the SEA and subsequently feed into the developing Strategies. Further, each scoped in SEA topic contains a policies, plans and programmed context section detailing the most pertinent elements of the policies, legislation, plans or programmes as they relate to the Strategies being developed.

3.5.1 Identification of Key Themes and Messages

The main themes, messages and objectives from the policies, plans and programmes review that are considered relevant to the Strategies are presented below. These are as follows:

- Reduce and manage the risks of flooding;
- Adapt to the impacts of climate change;
- Promote a strong and diverse economy;
- Promote sustainable, healthy and safe communities;
- Protect and enhance the quality, extent and character of open and green spaces, natural environments and waterways;
- Conserve flora and fauna and their habitats;
- Halt overall biodiversity loss;
- Improve water quality so all Heavily Modified waterbodies achieve 'good ecological potential' as set out in the Water Framework Directive;
- Provide an efficient, effective and robust transport system;
- Protect cultural heritage assets including conservation areas and built heritage; and

5 Water Framework Directive - Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, Strasbourg, European Parliament and European Council.

- Promote sustainable growth.

The themes, messages and objectives identified will provide an input into the process of identifying key issues and opportunities in developing the SEA framework.

4 SEA TOPICS – OVERVIEW

4.1 Scoping

The SEA Regulations require the assessment of the likely significant environmental effects of the Strategies covering the following SEA topics:

- Air;
- Biodiversity (including flora and fauna);
- Climate;
- Cultural heritage;
- Population;
- Human health;
- Landscape;
- Material assets;
- Geology and Soil;
- Water; and
- Interrelationship between the above factors.

Where each of these topics is considered to be likely to be impacted by the objectives of the strategies, this SEA Scoping Report includes a section on the topic and determines which issues within the topic are considered to be likely to be subject to significant effects

In order to successfully identify likely impact sources and to integrate differing issues and competing objectives it is important to first identify the range of objectives and measures that the strategies aim to deliver.

4.2 Draft Strategies Objectives and Measures

The SEA process is an iterative one and this SEA Scoping has been undertaken during the initial stages of the Strategies' development. At the time of completing this Scoping exercise, each of the LLFAs has facilitated a series of workshops to create a draft list of Strategy objectives and measures. The draft objectives and measures have been developed in line with the Environment Agency's National Flood and Coastal Erosion Risk Management Strategy for England[6]. The national objectives for flood risk management have been listed below. The final objectives and measures will be fully detailed in each of the boroughs environmental reports:

- **Understand the risks** – understanding the risks of flooding and coastal erosion, working together to put in place long-term plans to manage these risks and making sure that other plans take account of them,
- **Prevent inappropriate development** – avoiding inappropriate development in areas of flood and coastal erosion risk and being careful to manage land elsewhere to avoid increasing risks,
- **Manage the likelihood of flooding** – building, maintaining and improving flood and coastal erosion management infrastructure and systems to reduce the likelihood of harm to people and damage to the economy, environment and society,

6 Environment Agency (2011) National flood and coastal erosion risk management strategy for England http://www.environment-agency.gov.uk/research/policy/130073.aspx

- **Help people to manage their own risk** – increasing public awareness of the risk that remains and engaging with people at risk to encourage them to take action to manage the risks that they face and to make their property more resilient, and
- **Improve flood prediction, warning and post-flood recovery** – improving the detection, forecasting and issue of warnings of flooding, planning for and co-ordinating a rapid response to flood emergencies and promoting faster recovery from flooding.

The draft objectives of the Strategies are high level and the strategies do not include proposals or detail of site specific measures for management of local flood risk that can be assessed within the SEA. However, it is acknowledged that some of the draft objectives, and the measures required to deliver them, have the potential to lead to development of specific action plans or on the ground management options and activities at some point in the future (such as flood storage areas, or improved drainage management). For this reason, the SEA will provide an assessment at a level of detail that recognises the uncertainty in spatial scope and hence considers generically across the study area how the strategy could lead to options and activities which in turn lead to effects as the Strategies develop.

4.3 Scoping outcome

The SEA Directive outlines aspects of the environment that must be considered. However, if there are unlikely to be any significant effects upon a particular environmental receptor, as a result of the Strategies, it is possible to scope the entire topic out of the assessment.

Sections 5 to 9 present individually each scoped in SEA topic, the policy context review, baseline data and identified key topic issues and SEA objectives.

The following SEA topics are considered unlikely to be significantly affected by the Strategies and it is therefore proposed to scope them out of the assessment.

4.3.1 Population

Due to the lack of spatial definition of options and activities within the Strategies, potential significant effects on population composition and distribution cannot be practically assessed through a SEA and has therefore been scoped out.

Inter-relationship with scoped in topics/themes

The impact of changes in local flood risk and implementation of options and activities that could lead from the Strategies in the future have been considered in relation to effects on human health and material assets (i.e. housing and community infrastructure) under these specific topics.

4.3.2 Air

The Strategies do not include objectives or measures that are envisaged to give rise to activities that emit greenhouse gas or other pollutants. In addition, it is considered that on the ground options that could eventually be developed from the Strategies are not likely to include components that require energy to operate. The effects upon air quality have therefore been excluded.

4.3.3 Climate

Given that flood risk is driven by the climate rather than having an effect on the climate, and since the implementation of the Strategies will not have an effect on climate, it is considered that the topic of climate can be scoped out.

Inter-relationship with scoped in topics/themes

The potential effects of climate change such as extreme weather and flooding will be addressed under the appropriate topic headings, such as material assets and water.

4.3.4 Geology and Soil

The measures being proposed are not envisaged to give rise to activities which will have significant impacts on geology or soils. In some instances, there is potential for options to lead to incidences where contaminated land may be affected, but this is considered to be a site specific issue and cannot be practically assessed through a SEA.

4.3.5 Landscape

There are no National Parks or Areas of Outstanding Natural Beauty (AONB) within the study area. Since no specific on the ground options or activities are specifically proposed, it is not possible to comment on design quality or impact on landscape character/quality and therefore considered to be site specific issues which cannot be practically assessed through a SEA.

Inter-relationship with scoped in topics/themes

Landscape related themes have been considered through a baseline review of Conservation Areas, Listed Buildings, parks, gardens and open spaces, statutory and non-statutory designated sites under the biodiversity and cultural, architectural and archaeological topics.

4.3.6 Flood Risk

It should also be noted that effects on flood risk have not been considered as an explicit theme or topic within the SEA process. The principal aim of the Strategies is to lead to objectives and measures which manage, and where possible reduce local flood risk. In keeping with the National Flood and Coastal Erosion Strategy, Local Strategies should not lead to the implementation of measures, options or activities that result in an increase in flood risk from other flooding sources. The SEA framework therefore takes the approach that flood risk as a theme will only be subject to beneficial effects and this is an inherent beneficial effect of the Strategies. Any adverse effects from measures that reduce flood risk are assessed within each of the SEA topic areas. This approach avoids the need for the SEA to repeat local flood risk information which is contained within the Strategy documents itself, and the associated supporting documents (such as the SWMPs and SFRAs).

5 HUMAN HEALTH

5.1 Policy, Plan and Programme context

At the national level, the UK Government Sustainable Development Strategy (2005) aims to enable people to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations.

The NPPF recognises that access to high quality open spaces and opportunities for sport and recreation can make an important contribution to the health and well-being of communities.

The public health role now resides within local authorities supported by Health and Well-Being Boards and informed by Joint Strategic Need Assessment's (JSNA) and Joint Well-being Strategies. JSNA's are available for each of the six Boroughs.

Preliminary Flood Risk Assessments (PFRAs) as part of the Drain London project, assess surface water flooding, identify flood risk areas, provide details on historic significant floods and provide information on future flood risks within each of the six Boroughs. The Greater London Flood Risk Area, which covers the administrative area of all six Boroughs, is an area where there is a significant risk of flooding from local sources, such as surface water, ground water and ordinary watercourses. Croydon, Sutton and Wandsworth have experienced a number of past surface water flooding events, most notably that of July 2007. This event is considered to have had significant harmful consequences for human health. Richmond, Kingston and Merton have also experienced a number of past surface water flooding events, however they have not been deemed to have had significant consequences.

The Health Protection Agency has published health advice following floods which outlines that the main threats to health during and immediately after a flood are drowning and injuries caused by accidents in flowing water. In addition to this, mental health and wellbeing can be affected after the flood event as can other consequences arising from the loss of employment should businesses not recover from a flood.

5.2 Existing and future baseline

The health of people across four of the Boroughs is generally better than the England average and deprivation is lower than the average. Croydon and Wandsworth are the only exceptions, where deprivation is also lower than average, but 18,900 children and 11,800 children respectively live in poverty. Deprivation is lower than the national average across all six Boroughs.

Life expectancy is higher than the national average across four Boroughs, with the exception of Croydon and Wandsworth, where life expectancy is similar to the national average. When comparing life expectancy between the most deprived and least deprived areas across the six Boroughs, life expectancy varies between 5.8 (Kingston) and 9.5 (Croydon) years lower for men and between 4.1 (Richmond) and 6.8 (Wandsworth) years lower for women.

The health and levels of deprivation of people across the six Boroughs are likely to continue to be better than, or improve on, the national average.

5.3 Key topic issues

Flooding can result in effects of both physical and psychological health, which could exacerbate existing health issues including:

- Drowning, injuries and falls resulting from direct exposure to deep and/or flowing flood waters, lack of adequate warning and fast flowing water carrying debris;

- Respiratory disease, shock hypothermia and cardiac arrest may occur as a result of flooding;
- Contact with polluted waters and damp conditions can lead to wound infections, dermatitis, conjunctivitis, gastrointestinal illness, ear/nose/throat infections and the possibility of serious waterborne diseases;
- Contamination to water supply from combined sewer overflows and disruption to services;
- Perceived level of flood risk and fear of flooding may affect levels of stress and impact on the quality of life;
- Elderly and less mobile populations are at increased risk from the direct and indirect consequences of flooding; and
- Physical and emotional stress due to loss of property, evacuation and disturbances as a result of injury.

5.3.1 Scoping

Based on the key topic issues identified, it was possible to determine which sustainability themes associated with human health are most relevant to the Strategies and where the most significant likely effects might be.

Table 5.1 below sets out the scoping conclusions of the sustainability themes considered under the human health topic and a reason explaining how the scoping conclusion was met for each sustainability theme.

Table 5.1: Scoping Conclusions for Human Health

Sustainability Themes	Scoping (In/Out)	Reason
Population		
Population Growth	**Out**	Associated increase in housing requirement is covered under the Material Assets topic, housing allocations theme.
Increasing population of children	**Out**	Associated increase in housing requirement is covered under the Material Assets topic, housing allocations and schools themes.
Increasing population of those over the age of 75	**Out**	Covered under the Material Assets topic, housing allocations and residential care homes themes.
Deprivation		
Address cycle of deprivation	**In**	Reduced flood risk may reduce some of the barriers for business investment.
Retain well educated workforce	**Out**	Management of flood risk is unlikely to affect levels of deprivation.
Access to services	**Out**	Access to services is unlikely to be compromised.

Sustainability Themes	Scoping (In/Out)	Reason
Public Health		
Elderly safety	**In**	Reducing risk of flooding to those with long term illness where supported evacuation could be needed.
Emotional stress	**In**	Raising awareness and enabling communities to help themselves can reduce fear of flooding and inform individuals on how to prepare for a flood incident.
Physical injuries	**In**	Raising awareness and reducing flood risk can help towards preventing injuries associated with flooding.
Spread of disease and exposure to contaminated water	**In**	Reducing flood risk and raising awareness may help to reduce the spread and exposure to contaminated water.
Obesity in adults and children	**Out**	The creation of flood alleviation measures is unlikely to lead to the creation of new open space, which may assist in the reduction of obesity through the provision of recreational areas.
Mobility and access to services	**Out**	Flood risk is unlikely to affect access to key services except potentially for extreme events.
Fuel poverty	**Out**	No effects upon fuel poverty are anticipated.
Crime and Safety		
Reported burglary	**Out**	Flood management measures are unlikely to affect the profiles of burglary or crime.
Violence	**Out**	

5.4 SEA objectives and indicators

Based upon the human health baseline and key issues identified, the following SEA objectives are proposed against which the Strategies will be assessed:

- To enhance human health and wellbeing through reducing local flood risk;
- To raise awareness and understanding of the flood risk and dangers associated with flooding;
- To contribute towards reducing flood risk affecting vulnerable residents, such as elderly people or deprived areas; and
- To assist in reducing the barriers to economic regeneration and thus assist in reducing area deprivation.

The indicator to be used is:

- Number of flood incidents reported;
- Number of properties / businesses at risk of flooding;

- Number of flood related injuries/fatalities; and
- Number of measures located in areas with an above average number of elderly people or level of deprivation.

6 BIODIVERSITY

6.1 Policy, Plan and Programme context

Sites of a European status are protected under the Habitats Directive, while national legislation (the Wildlife and Countryside Act (1981) (as amended)) protects Sites of Special Scientific Interest (SSSI) and listed species. The local authority is also under a duty to protect and promote biodiversity arising from the Natural Environment and Rural Communities (NERC) Act (2006).

In March 2010, the European Council issued a new target to halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020 and to support efforts to avert global biodiversity loss. There are six main targets and 20 actions. Of the six targets, those considered relevant to the Strategies cover:

- Full implementation of EU nature legislation to protect biodiversity;
- Better protection for ecosystems, and more use of green infrastructure;
- Tighter controls on invasive alien species; and
- A bigger EU contribution to averting global biodiversity loss.

The NPPF[7] states that impacts from development on biodiversity should be minimised and net gains should be provided where possible. Coherent ecological networks that are more resilient to current and future pressures should be established.

At the regional scale, the London Plan has adopted the targets for habitat restoration and creation set by the London Biodiversity Partnership. It states that priority should be placed on connecting fragmented habitat and increasing the size of habitat areas to increase resilience to climate change.

Supplementary Planning Guidance (SPG) and Best Practice Guidance (BPG) such as the All London Green Grid SPG (2012) and Open Space Strategies BPG (2004) both provide detailed advice on implementing London Plan policy to improve the nature conservation interest of London's parks and green spaces.

Biodiversity Action Plan (BAP) species are also recognised in the London Plan, stating 'The Mayor will and Boroughs should resist development that would have a significant adverse impact on the population or conservation status of protected species or priority species identified in the UK, London and Borough BAPs[8].'

Four of the six London Boroughs (LBs) have outlined their own Local Biodiversity Action Plans (LBAPs). LB Wandsworth contributes towards the London Biodiversity Partnership. LB Merton does not implement a LBAP, however, management plans for all Local Nature Reserves (LNRs) have been adopted and are designed to conserve and enhance wildlife value.

At a local level, the LBAPs objectives considered relevant to the Strategies include:

- To conserve, and where possible, enhance the variety of habitats and species, in particular those, which are of international or national importance, are in decline locally, are characteristic to a specific Borough or have particular public appeal, which can raise the profile of biodiversity;
- To implement practical conservation, protection and enhancement measures; and

7 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

8 Policy 3D.14 Biodiversity and nature conservation, London Plan, 2008

- To identify indicators of sustainability, and develop both targets and a means of monitoring the progress of the plan.

The promotion of biodiversity is also a key priority in the Core Strategies in that they seek to enhance existing open spaces and the natural environment by providing adequate habitats for biodiversity to flourish.

6.2 Other relevant objectives

The following objectives have been identified as relevant to this sustainability topic from a review of international, EU and national objectives:

Bern Convention on the Conservation of European Wildlife and Natural Habitats, 1979[9]:

- To protect endangered species and their habitats.

Wild Birds Directive 2009/147/EC[10]:

- To protect all naturally occurring wild bird species and their habitats, with particular protection of rare species.

Bonn Convention on the Conservation of Migratory Species of Wild Animals, 1979[11]:

- To protect threatened animals that migrate across national boundaries and/or the high seas.

Habitats Directive 92/43/EEC, 1992[12]:

- To protect important natural habitat (listed in Annex I, amended in Directive 97/62/EC) and species (listed in Annex II), using measures to maintain or restore their "favourable conservation status", principally through the designation of Special Protection Areas and Special Areas of Conservation, but also (through land-use and development policies) by management of the landscape features of importance to wildlife outside SPAs and SACs; and
- To safeguard species needing strict protection (Annex IV). This Directive is transposed into UK law through the Conservation (Natural Habitats &c.) Regulations, 1994.

The EU Sixth Environmental Action Plan 2002[13] (7th Environmental Action Plan is currently being developed):

- Focuses attention on four priority areas for action: Tackling climate change; nature and biodiversity; environment and health; and natural resources and waste.

The Wildlife and Countryside Act 1981[14] (as amended by the Countryside Rights of Way Act 2000[15]):

9 http://conventions.coe.int/Treaty/en/Treaties/Word/104.doc

10 Council Directive 2009/147/EC on the conservation of wild birds (codified version of 79/409/EEC)
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:020:0007:0025:EN:PDF

11 http://www.cms.int/documents/convtxt/cms_convtxt.htm

12Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna accessible via:
http://ec.europa.eu/environment/nature/legislation/habitatsdirective/

13 http://ec.europa.eu/environment/newprg/intro.htm

14 http://www.legislation.gov.uk/ukpga/1981/69/pdfs/ukpga_19810069_en.pdf

15 http://www.legislation.gov.uk/ukpga/2000/37/contents

- Part I is concerned with the protection of wildlife;
- Part II relates to the countryside and national parks (and the designation of protected areas);
- Part III covers public rights of way;
- Part IV deals with miscellaneous provisions of the Act.

The Mayor's Biodiversity Strategy - Connecting with London's nature (July 2002):

- To ensure all Londoners have ready access to wildlife and natural green spaces;
- Conserve London's plants and animals and their habitat;
- Ensure the economic benefits of natural green space and greening are fully realised;
- Ensure London enjoys the functional benefits that biodiversity can bring; and
- Recognise biodiversity conservation as an essential element of sustainable development.

6.3 Existing and future baseline

There are two European designated sites, both of which are Special Areas of Conservation (SAC) within the study area (there are no designated Special Protection Areas (SPA)). There are also seven nationally designated sites within the study area, including six Sites of Special Scientific Interest (SSSI) and one National Nature Reserve (NNR). Table 6.1 lists the internationally and nationally designated sites within the study area, along with reason for designation, level of risk of flooding from surface water (SW), groundwater (GW) and ordinary watercourse (OW), and likely dependency on water.

Table 6.1: Condition of Designated Areas that could be affected by the Strategies[16][17]

Site	Status	Designated for	Risk of flooding	Water dependent
Richmond Park	SAC, SSSI and NNR	SAC designation Annex II species that are a primary reason for selection of this site • Stag beetle *Lucanus cervus* SSSI designation Range of habitats of value to wildlife including acid grassland, broadleaved woodland, and of most relevance, ponds and ditches.	SW - Moderate GW - Low OW - Low	Yes
Wimbledon Common	SAC and SSSI	SAC designation Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site • Northern Atlantic wet heaths with *Erica tetralix* • European dry heaths Annex II species that are a primary reason for selection of this site • Stag beetle *Lucanus cervus* SSSI designation The most extensive area of open, wet heath on acidic soil in Greater London. Acidic soils and poor drainage give rise to a mosaic of wet heath and unimproved acidic grassland.	SW - Low GW - Low OW - Low	Yes
Barn Elms	SSSI	A mosaic of wetland habitats supporting nationally important wintering populations of shoveler *Anas clypeata* and an assemblage of breeding birds associated with lowland waters and their margins.	SW - Moderate GW - Low OW - Low	Yes
Farthing Downs & Happy Valley	SSSI	The most extensive area of semi-natural downland habitats remaining in Greater London. The site is of particular interest for its species-rich chalk and neutral grasslands, and for an area of ancient woodland.	SW - Moderate GW - Low OW - Low	No
Riddlesdown	SSSI	Site is of particular interest as the largest single expanse of long-established calcareous scrub in Greater London and also for its herb-rich chalk grassland.	SW - Low GW - Moderate OW - Low	No
Croham Hurst	SSSI	An area of ancient woodland with a range of stand types that reflect the variations in the underlying geology.	SW - Low GW - Low OW - Low	No

16 http://www.jncc.gov.uk/ProtectedSites/

17 http://www.sssi.naturalengland.org.uk/special/sssi/search.cfm

Across the study area there are 46 statutory designated Local Nature Reserves (LNR), of which 15 are located in Merton, 11 in Sutton, nine in Kingston, five in Richmond, five in Croydon and one in Wandsworth.

Whilst not a statutory designation, it is worth noting the Wandle Valley Regional Park which consists of network of green spaces notably the Wandle Trail, Mitcham Common, Beddington Park and Farmlands, and passes through Croydon, Sutton, Merton and Wandsworth.

Local Sites are sites of substantive nature conservation value or geological interest. In London, Local Sites consist of Sites of Importance for Nature Conservation (SINC), of which there are three tiers of importance; Sites of Metropolitan Importance (SMI) Sites of Borough Importance (SBI) and Sites of Local Importance (SLI). Table 6.2 below lists the number of non-statutory SINC's per London Borough.

Table 6.2: Number of locally important designated sites

Borough	Sites of Importance for Nature Conservation (SINC)			Total
	Metropolitan Importance (SMI)	Borough Importance (SBI)	Local Importance (SLI)	
Merton	4	34	19	57
Sutton	5	24	13	42
Richmond	16	18	19	53
Croydon	13	44	17	74
Wandsworth	5	20	10	35
Kingston		39		39

Table 6.3 below lists the habitat types present throughout each Borough, as identified in the LBAPs or Open Space Strategies. Some of these habitats are likely to be water-dependent Protected Areas designated under other EU Directives such as the Habitats Directive.

Table 6.3: London regional BAP Habitats present in each Borough

Habitat \ Borough	Merton	Sutton	Richmond	Croydon	Wandsworth	Kingston
Woodland	Yes	Yes	Yes	Yes	Yes	Yes
Chalk grassland	No	Yes	No	Yes	No	No
Acid grassland	Yes	No	Yes	No	Yes	No
Heathland	Yes	No	No	Yes	Yes	No

Reed beds	Yes	Yes	Yes	No	No	No
Orchards	Yes	Yes	Yes	Yes	Yes	Yes
Meadows and pastures	Yes	No	Yes	No	Yes	Yes
Tidal Thames	No	No	Yes	No	Yes	Yes
Rivers and streams	Yes	Yes	Yes	Yes	Yes	Yes
Standing water	Yes	Yes	Yes	Yes	Yes	Yes
Fen, marsh and swamp	No	No	Yes	No	No	No

Table 6.2 andTable 6.3 were derived from a combination of the respective Boroughs Biodiversity Action Plans (Sutton and Richmond), Local Plans (Wandsworth and Croydon) or Open Space Strategy (Wandsworth, Merton and Kingston). In addition, Croydon had recently undergone a review of its SINC's and this has been used in combination with the Local Plan.

As habitats are limited and often isolated within the largely urban context of the study area, biodiversity is envisaged to experience continued pressure. Climate change is also likely to affect habitats, for example through changes in flood risk and/or changes in water levels. However, the London Biodiversity Action Plan[18] and Local Biodiversity Action Plans set out strategies for maintaining, restoring and creating habitats and as a result, biodiversity is expected to improve. In addition, assuming the habitat targets for 2020 as set out in the London BAP[19] are met, it is likely that the size of existing habitats and presence of habitats across the study area may increase.

It is assumed that the number of international and national designated sites in the study area is unlikely to alter substantially in the foreseeable future.

6.4 Key topic issues

The nature of the impacts on biodiversity, flora and fauna associated with the future potential measures of the Strategies can be both positive and negative. These include:

- The protection of biodiversity, designated and non-designated sites from local flooding;
- The opportunity to create new habitats, either through mitigation or design;
- Irreversible changes to the hydrological balance of habitats as a result of change in land use associated with mitigation or design; and
- Moving of flood risk or enhancing flood risk to another area.

18 http://www.lbp.org.uk/londonhabspp.html#HAPlist

19 http://www.lbp.org.uk/habitattargets.html

6.4.1 Scoping

Based on the key topic issues identified, it was possible to determine which sustainability themes associated with Biodiversity are most relevant to the Strategies and where the most significant likely effect might be.

Table 6.4 sets out the scoping conclusions of the sustainability themes considered under the biodiversity topic and a reason explaining how the scoping conclusion was met for each sustainability theme

Table 6.4: Scoping Conclusions for Biodiversity

Sustainability Themes	Scoping (In/Out)	Reason
Nationally designated sites	**In**	Designated sites within the study area identified at being at risk of local flooding and/or are water dependent.
Locally designated sites	**In**	Due to the large number of SINC's within the study area, it is likely that some designated sites are at risk of local flooding and/or are water dependent.
Non-designated sites	**In**	Due to the large number of non-designated sites within the study area, it is likely that some sites are at risk of local flooding and/or are water dependent. Also covers the Wandle Valley Regional Park which passes through Croydon, Sutton, Merton and Wandsworth.
Water dependent LBAP habitats and species	**In**	The Strategies measures have the potential to affect habitats and species by altering flow levels to water dependent habitats. There is also potential for habitat enhancement.
Habitat fragmentation	**In**	Flood reduction measures have the potential to positively and negatively alter habitat connectivity.
Wildlife disturbance	**Out**	More appropriately addressed at a project scale when detailed information concerning design of flood measures is available.
National Parks	**Out**	No National Parks within the study area.

6.5 SEA objectives and indicators

Based upon the biodiversity resources and key issues identified, the following SEA objectives are proposed against which the strategies will be assessed:

- To conserve, and where possible, enhance wildlife corridors and habitats;
- To enhance landscape quality and green infrastructure across the study area;
- To conserve and enhance the city's historic environment and heritage assets;
- To provide resilience to the consequences of climate change; and
- To protect and improve the water environment.

The indicators to be used are:

- Areas assigned for flood reduction measures that contributes to wildlife and habitat;
- Number of flood risk management measures delivering enhanced landscape quality and green infrastructure; and
- Negative impacts on statutory and non-statutory ecological sites as a result of flooding.

7 WATER

7.1 Policy, Plan and Programme context

The Water Framework Directive (2000/60/EC)[20] promotes an integrated and coordinated approach to water management at the river basin scale. One of its key objectives is the requirement to prevent deterioration in status and achieve at least Good ecological Status in inland and coastal waters following deadlines ranging from 2015 to 2027. The WFD also requires all Artificial or Heavily Modified Water Bodies to achieve Good Ecological Potential.

At the national level, River Basin Management Plans (RBMPs) have been prepared by the Environment Agency and is the preferred method for implementing the WFD objectives on designated waterbodies within the UK. RBMP's focus on the protection, improvement and sustainable use of the water environment by setting out environmental objectives to be achieved for each WFD designated waterbody.

At the regional scale, the London Plan, which refers to London's waterways as the 'Blue Ribbon Network', includes policies relating to their management, recognising leisure, tourism, transport, biodiversity and restoration as important aspects. It also includes policies in terms of adapting to climate change relating to water quality and wastewater infrastructure, sustainable drainage and flood risk management.

Alongside the London Plan, the Mayor's Water Strategy[21] is intended to complement the plans and strategies of other organisations, including the national water strategy, by presenting a London specific view of water management. Its goal is improved water management in terms water supply, wastewater and flooding.

As described in Section 4.3, flood risk has not been considered within the SEA process and therefore not covered under the water topic. The Strategies set out the approach to managing flood risk from local sources with proposals for actions that will help manage the risk, and thus there is no requirement to identify likely significant effects on flood risk (as a receptor) as a result of implementing the Strategies within this SEA.

7.2 Other relevant objectives

Water Framework Directive 2000[22]:

- Prevent deterioration in status for water bodies
- Aim to achieve good ecological and good surface water chemical status in water bodies by 2015
- For water bodies that are designated as artificial or heavily modified, aim to achieve good ecological potential by 2015
- Comply with objectives and standards for protected areas where relevant
- Reduce pollution from priority substances and cease discharges, emissions and losses of priority hazardous substances.

Urban Wastewater Treatment Directive 1991[23]:

20 Directive 2000/60/EC of the European Parliament and the Council establishing a framework for the Community action in the field of water policy accessible via: http://ec.europa.eu/environment/water/water-framework/

21 http://www.london.gov.uk/priorities/environment/publications/securing-london-s-water-future-the-mayor-s-water-strategy

22 Directive 2000/60/EC of the European Parliament and the Council establishing a framework for the Community action in the field of water policy accessible via: http://ec.europa.eu/environment/water/water-framework/index_en.html

23 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1991L0271:20081211:EN:PDF

- The Directive aims to protect the environment from the adverse effects of wastewater discharges;
- All urban waste water must undergo secondary treatment or equivalent, in particular for all discharges from agglomerations of more than 15,000 population equivalent (i.e. with a 5-day BOD of 60g of oxygen per day) and all discharges to freshwater and estuaries from agglomerations between 2,000 and 10,000 population equivalent.

Groundwater (England and Wales) Regulations 2009[24]:

- Seeks to prevent or limit the input of pollutants in to groundwater.

Water for People and the Environment: Water Resources Strategy for England and Wales[25]:

- The Environment Agency is able to manage water resources and protect the water environment in the face of climate change
- Species and habitats that depend on water are restored, protected, improved and valued
- Good water management contributes to sustainable development by supporting people and the economy in an improved environment
- People value water and enjoy their water environment and understand how it contributes to their quality of life.

Waterways for Tomorrow 2000[26]:

- DEFRA's aims for the inland waterways are to see an improving quality of infrastructure; a better experience for users through more co-operation between navigation authorities; and increased opportunities for all through sustainable development.

Securing London's Water Future: the Mayor's Water Strategy (2011)[27]:

- To use the water London already has more effectively and efficiently
- To minimise the release of untreated wastewater and diffuse pollution into the water environment
- To manage, and where possible reduce, the threat of flooding to people and their property.

Thames RBMP (2009)[28]:

- The Environment Agency will undertake pollution prevention projects on the River Wandle
- The Environment Agency and Natural England will work together to continue to develop and implement the London Rivers Action Plan to improve ecology through habitat creation and enhancement
- Physical habitat pressures will be considered through the delivery of proposed flood risk management work, for example at Ashlone Wharf (Wandsworth) and Worcester Park on the Beverley Brook (Sutton).

24 http://www.legislation.gov.uk/uksi/2009/2902/pdfs/uksi_20092902_en.pdf

25 http://www.environment-agency.gov.uk/research/library/publications/40731.aspx

26 http://archive.defra.gov.uk/rural/documents/countryside/waterways/waterways-for-tomorrow.pdf

27 http://www.london.gov.uk/priorities/environment/publications/securing-london-s-water-future-the-mayor-s-water-strategy

28 http://www.environment-agency.gov.uk/research/planning/125035.aspx

7.3 Existing and future baseline

The study area falls entirely within the Thames River Basin District, which consists of 17 management catchments. Management catchments are further broken down into individual 'river waterbody catchments' (referred to as WFD waterbodies).

The majority of the study area falls within the 'London' management catchment which is comprised of the non-tidal urban tributaries of the Thames Tideway. Parts of Richmond and Kingston also fall within the 'Maidenhead to Sunbury' management catchment, specifically the Thames (Egham to Teddington) WFD waterbody. As named under the WFD, the waterbodies found within the study area include:

- Wandle (Croydon to Wandsworth) and the River Graveney;
- Wandle (Carshalton Branch at Carshalton);
- Crane (including part of the Yeading Brook);
- Pool River;
- Beverley Brook (Motspur Park to Thames) and Pyl Brook at West Barnes;
- Hogsmill; and
- Thames (Egham to Teddington) (Maidenhead to Sunbury management catchment).

Detailed information for the WFD waterbodies found within the study area including their current WFD status, reasons for less than Good status and target objectives are provided in Appendix C.

All WFD waterbodies within the study area are designated as Heavily Modified, and therefore defined as being at significant risk of failing to achieve good ecological status due to modifications to their hydromorphological characteristics. As a result, Heavily Modified waterbodies must aim to achieve good ecological potential by 2027[29] rather than good ecological status. Currently;

- Pool River and Hogsmill are assessed as moderate ecological status; and
- the remaining five waterbodies are assessed as poor ecological status.

Poor water quality from both diffuse (urban runoff) and point sources (storm sewage overflows, misconnections and sewage treatment work effluent) has affected aquatic ecology, limiting the diversity of species to those most tolerant to pollution. These issues, along with invasive species and physical modification pressures, are the main reasons for failure to meet good ecological potential.

It is assumed that the ecological status of the WFD waterbodies within the study area will improve over time in order to meet the requirement of good ecological potential. In relation to water quality, the Climate Change Risk Assessment (CCRA) highlighted that an increase in winter precipitation could lead to potential increases in Combined Sewer Outflow (CSO) spill frequency and volumes. The proposed Thames Tideway Tunnel aims to combat this problem within Greater London.

7.4 Key topic issues

The key environmental issues identified are:

29 http://www.environment-agency.gov.uk/research/planning/33352.aspx

- Waterbodies are of poor or moderate ecological status, and therefore do not meet the WFD good ecological status target;
- All waterbodies must reach good ecological status by 2027;
- Local flooding can contribute to high levels of nutrients and pollutants in WFD waterbodies through the cumulative effect of surface water runoff and drainage of ordinary watercourse to WFD waterbodies, thereby affecting a waterbody's ability to achieve and/or maintain good ecological status; and
- Impacts upon surface water quality, groundwater quality and hydromorphology may arise as a consequence of future flooding and potentially as a result of flood risk mitigation.

7.4.1 Scoping

Based on the key topic issues identified, it was possible to determine which sustainability themes associated with Water are most relevant to the Strategies and where the most significant likely effect might be.

Table 6.4 sets out the scoping conclusions of the sustainability themes considered under the Water topic and a reason explaining how the scoping conclusion was met for each sustainability theme

Table 7.1: Scoping Conclusions for Water

Sustainability Themes	Scoping (In/Out)	Reason
Water quality	**In**	On the ground measures have the potential to influence water quality both adversely and beneficially, through the change in polluted urban runoff and sediment runoff.
Hydromorphology	**In**	On the ground measures could have positive or negative effects on flow, and physical form of channels.
Flood Risk	**Out**	The Strategies themselves address flood risk and assess flood risk in SEA context in relation to how these changes affect other receptors.

7.5 SEA objectives and indicators

Based upon the current condition of environmental water resources and key issues identified, the following SEA objectives are proposed against which the Strategies will be assessed:

- Protect and enhance where possible the water quality and hydromorphology of watercourses and WFD waterbodies.

The indicators to be used are:

- WFD objectives achieved on watercourses where measures have been implemented; and
- Consultation with the Environment Agency regarding ecological and chemical status of waterbodies.

8 MATERIAL ASSETS

8.1 Introduction

Although 'Material Assets' are listed as a topic to be addressed in SEA, the SEA Directive does not define specifically what is encompassed by the term "material asset". For the purposes of this Scoping Report, Material Assets refers to buildings, utilities and transport and community infrastructure present within the study area that could potentially be affected by local sources of flooding, and hence could be impacted positively or negatively following implementation of the strategies' objectives. The following assets have been considered as part of the scoping:

- Community services (such as schools, hospitals and doctors surgeries);
- Housing;
- Economy;
- Agriculture and land use;
- Water supply assets (such as Water Treatment Works);
- Waste management assets;
- Energy infrastructure; and
- Transport infrastructure.

Each of these is briefly reviewed to inform the identification of issues to be considered in the assessment.

8.2 Policy, Plan and Programme context

The Flood and Water Management Act 2010 requires LLFAs to consider how local flood risk can be managed in relation to people, homes, businesses and community infrastructure. The Strategies are a key requirement of the Act, and set out how local flood risk management will be achieved.

In terms of provision of future 'material asset' provision, at the national level, Securing the Future: UK Government Sustainable Development Strategy (2005) seeks to enable people to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations. The NPPF sets out how planning should contribute to sustainable development and that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. Local Plans should apply a sequential, risk-based approach to the location of development to avoid where possible flood risk to people and property. They should also manage any residual risk, taking account of the impacts of climate change.

At an LLFA level, the PFRAs and SWMPs have identified a number of past surface water flooding events, most notably that of July 2007 which was considered to have had significant harmful consequences for human health, economic activity, the environment and/or cultural heritage.

8.3 Other relevant objectives

Future growth and provision of infrastructure is a key consideration for the Strategies and ensuring local flood risk is managed for this as well as current assets. The London Plan sets out minimum targets for housing development for the planning period 2015 - 2025 for each of the Boroughs as follows:

- 14,348 homes in Croydon;
- 6,434 homes in Kingston upon Thames;
- 4,107 homes in Merton;
- 3,150 homes in Richmond upon Thames;
- 3,626 homes in Sutton; and
- 18,123 homes in Wandsworth.

The London Housing Strategy (2010)[30]:

- Promote opportunity and a real choice of homes for all Londoners, in a range of tenures that meets their needs at a price they can afford;
- Promote high quality design in 21st century homes that will match London's rich architectural heritage; and
- Deliver higher environmental standards for all London's homes and neighbourhoods – in the new homes that are built, existing homes and the areas that surround them.

The Mayor's Transport Strategy (2010)[31] has six broad goals, of which the most relevant to the Strategies are:

- Enhance the quality of life for all Londoners;
- Improve the safety and security of all Londoners; and
- Reduce transport's contribution to climate change and improve its resilience.

London's Wasted Resource: The Mayor's Municipal Waste Management Strategy (2011)[32]:

- Minimise the impact of municipal waste management on the environment and reduce the carbon footprint of London's municipal waste;
- Unlock the economic value of London's municipal waste through increased levels of reuse, recycling, composting and the generation of low carbon energy from waste; and
- Manage the bulk of London's municipal waste within London's boundary, through investment in new waste infrastructure.

South London Waste Plan (2012)[33], applicable only to the Boroughs of Croydon, Kingston, Merton and Sutton:

- Minimise adverse impacts on people and the local environment, taking climate change into account, by having waste facilities in suitable locations, using the best available technologies and ensuring the highest standards of design and layout; and
- Identify enough land within the partner Boroughs of Croydon, Kingston, Merton and Sutton to enable the development of sufficient new waste management facilities The Boroughs will safeguard existing waste sites and maximise the use of these, where appropriate.

30 http://www.london.gov.uk/priorities/housing-land/publications/london-housing-strategy

31 http://www.london.gov.uk/priorities/transport/publications/mayors-transport-strategy

32 http://www.london.gov.uk/priorities/environment/publications/the-mayors-waste-management-strategies

33 http://www.slwp.org.uk/what-we-do/residual-waste-treatment/south-london-waste-plan/

Other policies, plans and programmes that set the broad legislative and policy context for considering material assets can be found in Appendix D.

8.4 Existing and future baseline

Some material assets are considered to be 'essential' or 'critical' infrastructure and deemed necessary to keep functioning during flooding. In the context of the Strategies, these assets are those where flooding could compromise the delivery of community services provided thereby threatening the health and safety of a wider population. In addition to essential infrastructure, assets are also considered in terms of vulnerability and sensitivity to flood risk. Table 8.1 and Table 8.2 summarise the different categories, distribution and quantity of infrastructure across the study area.

Table 8.1: Number of properties and assets at risk of flooding during a 1% AEP Rainfall event[34].

Category	Merton	Sutton	Richmond	Croydon	Wandsworth	Kingston
Essential Infrastructure	24	14	13	42	19	18
Highly Vulnerable Infrastructure	1	2	4	8	2	1
More Vulnerable Infrastructure	38	37	51	134	92	32
Households (including deprived & non-deprived)	11,731	11,395	12,450	28,377	17,502	8,941
Commercial / Industrial	407	603	1,080	2,120	1,511	589

Table 8.2: Description of infrastructure categories in terms of vulnerability to flood risk. Table interpreted from NPPF Technical Guidance[35].

Category	Description
Essential Infrastructure	Essential transport infrastructure which has to cross the area at risk Mass evacuation routes Tube stations and entrances Essential utility infrastructure which has to be located in a flood risk area for operation reasons Electricity generating power stations and grid and primary substations Water treatment works

34 Data from each Boroughs respective PFRA.

35 Communities and Local Government (2012) Technical Guidance to the National Planning Policy Framework.

Highly Vulnerable Infrastructure	Police stations, Ambulance stations, Fire stations, Command Centres and telecommunications installations Emergency disposal points Installations requiring hazardous substances consent
More Vulnerable Infrastructure	Hospitals Health Services Education establishments, nurseries Landfill, waste treatment and waste management facilities for hazardous waste Sewage treatment works Prisons
Households	All residential dwellings Caravans, mobile homes and park homes intended for permanent residential use Student halls of residence, residential care homes, children's homes, social services homes and hostels Deprived: Households falling into the lowest 20% of ranks by the Office of National Statistics' Indices of Multiple Deprivation Non-deprived: Households not falling into the lowest 20% of ranks by the Office of National Statistics' Indices of Multiple Deprivation

A total of 49,788 new homes are proposed to be built during the planning period within the study area[36]. It is likely that a proportion of these homes will either be located in areas currently at risk of local flooding, or areas where development may move or exacerbate the risk of local flooding to another area.

The study area is well served by an interconnecting transport network of roads (including red routes as classed by Transport for London as major routes through London), railways and the London underground.

- Croydon: The A23 (a red route) runs from south to north through the Borough connecting it to central London. The A232, also a red route, runs east to west connecting the Borough to neighbouring Sutton. Key rail links follow the same route from south to north to the Selhurst junction and Network Rail depot. East Croydon station is the only London underground station within the Borough.
- Kingston upon Thames: The A3 (a red route) is a strategically important highway, linking south west London with the M25 and Portsmouth. It follows the north eastern boundary of the Borough before travelling through the centre in a southerly direction through Chessington. There are nine National Rail stations and two centrally located bus stations. There are no London underground stations.
- Merton: Strategic road and rail networks traverse the Borough which includes red routes such as the A24, which runs through the Borough from Sutton and into Wandsworth, and the A217. There are five London underground stations and eleven mainline rail stations, including Wimbledon Station, within the Borough.

36 The London Plan (2011)

- Richmond upon Thames: The A316 and A205 trunk roads (both red routes) cross the Borough and the River Thames. The rail network is well served with overland (Waterloo and North London Lines) and underground (District Line) rail links. Heathrow airport is located to the north west of the Borough and generates large volumes of traffic which pass though the Borough.
- Sutton: The A24 and A217 (both red routes) traverse the Borough from south to north, providing key routes into central London. The A232 connects the Borough to neighbouring Croydon. The Borough is intersected by railway routes that provide over ground links from north to south and east to west.
- Wandsworth: The A3, A24, A205, A214, A306, A3205 and A3220 (all red routes) are the major truck roads which pass through the Borough from the neighbouring Boroughs of Richmond, Kingston and Merton, and provide links to the city of London. The Borough's major railway station is Clapham Junction, which provides rail and underground routes into and out of central London. There are also a number of smaller railway and underground stations providing links to the wider area.

Only one water treatment works within the study area is at significant risk of local flooding. Kenley water treatment works in Croydon is located within a Critical Drainage Area and is at risk of surface water and ground water flooding[37]. There are no sewage treatment works deemed to be at significant risk of flooding from local sources.

8.5 Key topic issues

The key issues associated with infrastructure and services have been identified as:

- Approximately 90,000 homes are at risk from surface water flooding from a 1 in a 100 year event (1% AEP);
- Local flooding has caused severe disturbance to communities throughout the study area with impacts including impassable roads, residential and business property flooding, school closures and landslips;
- Local flooding can severely reduce the public's ability to access services including water, power and telecommunications;
- Local flooding could lead to the spread of contaminants or harmful debris from waste management sites;
- Potential damage and reduced access to national and locally important open spaces, parks and recreation areas;
- Location of future development can increase local flood risk elsewhere; and
- Climate change is predicted to increase frequency and severity of flooding in the future, further exacerbating the key topic issues identified above.

8.5.1 Scoping

Based on the key topic issues identified, it was possible to determine which sustainability themes associated with material assets are most relevant to the Strategies and where the most significant likely effects might be.

37 Croydon Surface Water Management Plan

Table 8.3 sets out the scoping conclusions of the sustainability themes considered under the material assets topic and a reason explaining how the scoping conclusion was met for each sustainability theme.

Table 8.3: Scoping Conclusions for Material Assets

Sustainability Themes	Scoping (In/Out)	Reason
Community Services		
Hospitals	**In**	More vulnerable infrastructure located within the study area identified as being at risk of local flooding.
Residential care homes	**In**	Households located within the study area identified as being at risk of local flooding.
Emergency services	**In**	Highly vulnerable infrastructure located within the study area identified as being at risk of local flooding.
Schools	**In**	More vulnerable infrastructure located within the study area identified as being at risk of local flooding.
Housing		
Existing housing	**In**	Over 90,000 existing homes across the study area are considered to be at risk of local flooding.
Housing allocations	**In**	With over 49,000 new homes planned across the study area, it can be assumed that a proportion will be at risk of local flooding.
Existing and future housing design	**In**	Retrofitting existing homes and ensuring suitable design of new housing stock to reduce risk and potential effects of local flooding, and effects of climate change.
Economy		
Existing employment areas	**In**	Over 6,000 existing commercial/industrial units across the study area are considered to be at risk of local flooding.
Proposed business areas	**In**	Proposed employment areas are at risk of local flooding.
Agriculture and land use		
Open space/ parks/recreation areas	**In**	Due to the number of open spaces, parks and recreation areas across the study area, it can be assumed that some are at risk from local flooding. Potential to positively and negatively alter the character and quality of such spaces.

Sustainability Themes	Scoping (In/Out)	Reason
Agricultural areas	**Out**	Extent of agricultural area across the study area is small and fragmented. Unlikely to be affected by measures.
Waste Management		
Waste management and energy recovery	**In**	More vulnerable infrastructure located within the study area identified as being at risk of local flooding. Potential for spread of contaminants.
Recycled materials processing	**In**	More vulnerable infrastructure located within the study area identified as being at risk of local flooding. Potential for spread of contaminants.
Water Supply and Waste Water Treatment		
Water supply	**In**	Kenley WTW's in Croydon is located within a Critical Drainage Area. It is at risk of surface water and ground water flooding.
Waste water treatment	**Out**	No STW's are located within Critical Drainage Areas.
Transport Infrastructure		
Road and rail services	**In**	Essential infrastructure located within the study area identified as being at risk of local flooding. Potential for damage to infrastructure and reduced accessibility.
Broadband communications equipment	**Out**	More appropriately addressed at a project scale.
Energy Supply		
Power and transmission networks	**In**	There are records of power infrastructure located in Critical Drainage Areas and therefore at risk of surface water flooding.
Renewable energy	**Out**	Due to the small scale nature and spread of renewable energy sources across the study area, it is considered that this theme is more appropriately addressed at a project scale.
Adaptation to Climate Change		
Adaptation/resilience	**In**	Climate change is anticipated to increase the risk of local flooding.

8.6 SEA objectives and indicators

Based upon the current baseline of material assets and key issues identified, the following SEA objectives are proposed against which the Strategies will be assessed:

- Minimise the adverse impacts and consequences of local flood risk on existing and future key assets, infrastructure, homes and businesses;
- Ensure new development is located with respect to the Sequential Test;
- Protect and enhance the quality, character and availability of open spaces and natural resources, and minimise the potential for pollution; and
- Manage and mitigate the future effects of climate change with regard to local flooding through the adoption of sustainable flood management techniques (such as Sustainable Drainage Systems (SuDS)) in new and existing development.

The indicators to be used are:

- Number of residential and non-residential properties at risk of flooding from local sources;
- Number/severity/duration of incidents leading to unplanned disruption or damage to essential infrastructure and service provision;
- Number/area of open spaces at detrimental risk of local flooding;
- Number of measures that include enhancements to open spaces and recreational areas;
- Number of SuDS schemes adopted into existing and future developments; and
- Number of new developments permitted in areas of flood risk.

9 CULTURAL, ARCHITECTURAL AND ARCHAEOLOGICAL HERITAGE

9.1 Policy, Plan and Programme context

At the national level, the Government White Paper: Heritage Protection for the 21st Century (2007) seeks to put the historic environment at the heart of the planning system. The NPPF recognises that heritage assets are an irreplaceable resource and should be conserved in a manner appropriate to their significance, in order that they can be enjoyed for their contribution to the quality of life of current and future generations. The NPPF defines significance as "the value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting."

Heritage assets are defined by Government as "a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest (NPPF Annex 2 Glossary). Some heritage assets are designated under legislation such as Scheduled Monuments, Listed Buildings, Registered Parks and Gardens and Conservation Areas. Some undesignated heritage assets may also be recognized by Local Planning Authorities as having a degree of local interest or significance.

Cultural heritage is generally and most easily divided into three key areas comprising:

- Archaeology;
- Historic buildings; and
- Historic landscape.

9.2 Other relevant objectives

World Heritage Convention (1972)[38]:

- Calls for the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage sites.

The Convention for the Protection for the Architectural Heritage of Europe (The Granada Convention)[39]:

- Reinforces and promote policies for the conservation and enhancement of Europe's heritage.

The European Convention on the Protection of Archaeological Heritage (The Valetta Convention)[40]:

- Makes the conservation and enhancement of the archaeological heritage one of the goals of urban and regional planning policies. It is concerned in particular with arrangements to be made for co-operation among archaeologists and town and regional planners in order to ensure optimum conservation of archaeological heritage.

Ancient Monuments and Archaeological Areas Act (1979)[41]:

- Provides for nationally important archaeological sites to be statutorily protected as "scheduled ancient monuments" (now Scheduled Monuments).

38 http://whc.unesco.org/en/conventiontext

39 http://conventions.coe.int/Treaty/Commun/QueVoulezVous.asp?NT=121&CM=1&CL=ENG

40 http://conventions.coe.int/Treaty/Commun/QueVoulezVous.asp?NT=143&CM=1&CL=ENG

41 http://www.legislation.gov.uk/ukpga/1979/46

Planning (Listed Buildings and Conservation Areas) Act (1990)[42]:

- Provides specific protection for buildings and areas of special architectural or historic interest.

9.3 Existing and future baseline

The study area covers approximately 300 sq. km across the six London Boroughs (LB's). Much of this is urbanised, consisting of district centres and town centres such as Twickenham, Tooting, Putney, Clapham, Wimbledon and Morden, and metropolitan centres such as Croydon, Sutton and Kingston. The urban extent is fragmented by large open spaces, parks and gardens throughout, of which the most significant include Richmond Park, Bushy Park, Wimbledon Common, Battersea Park, Wandsworth Common, Wandle Valley Regional Park and areas of Green Belt (most notably in the Boroughs of Sutton and Croydon)

Across the study area there are:

- 2,090 Listed Buildings including; the Church of St Mary Addington (Croydon), Clattern Bridge (Kingston upon Thames), Wimbledon Theatre (Merton), Hampton Court Palace (Richmond upon Thames), Beddington Place (Sutton) and Roehampton House (Wandsworth).
- 27 Registered Parks and Gardens including; Norwood Grove (Croydon), Morden Hall Park (Merton), Bushy Park (Richmond upon Thames), Oaks Park (Sutton) and Battersea Park (Wandsworth).
- 1 World Heritage Site at the Royal Botanic Gardens, Kew (Richmond upon Thames).
- 27 Scheduled Monuments including; Elmers End moated site (South Norwood, Croydon), Castle Hill earthwork (Kingston upon Thames),Caesar's Camp (Wimbledon Common, Merton), Old Brew House (Richmond upon Thames) and the Dovecote in Beddington Park (Sutton).
- 206 Conservation Areas including; Addington Village (Croydon), Kingston Old Town (Kingston upon Thames), Wandle Valley (Merton), Twickenham Riverside (Richmond upon Thames), Cheam Village (Sutton) and Heaver Estate (Wandsworth).

One protected linear view, from King Henry VIII's Mound, Richmond to St Paul's Cathedral, exists within the study area and spans across the London Boroughs of Richmond and Wandsworth in a north easterly direction, as shown in the London View Management Framework SPG (2012)[43].

Table 9.1 demonstrates the presence and distribution of cultural, architectural and landscape heritage across the study area.

42 http://www.legislation.gov.uk/ukpga/1990/9/contents

43 http://www.london.gov.uk/priorities/planning/supplementary-planning-guidance/view-management

Table 9.1: Number of heritage assets across the study area.

Asset \ Borough	Merton[44]	Sutton[45]	Richmond[46]	Croydon[47]	Wandsworth[48]	Kingston[49]
Listed Buildings (Grade I, II* & II)	315[50]	176[51]	802[52]	150[53]	500[54]	147
Registered Parks and Gardens	4	1	15	2	5	0
World Heritage Sites	0	0	1	0	0	0
Scheduled Monuments	3	6	4	8	0	6
Conservation Areas	28	15	72	20	45	26

Some of these assets are considered to be 'at risk'; for many of the Scheduled Monuments the main risks are inappropriate management such as overgrown vegetation, erosion and decay[55].

There are unlikely to be substantial changes to the historic and cultural heritage environment given its importance within all six Boroughs. Built heritage conservation and cultural heritage assets are likely to remain an important economic, social and environmental feature for all six Boroughs.

9.4 Key topic issues

The key environmental issues identified are:

- Some heritage assets are likely to be at risk of flooding, and/or are reliant on water levels/flow, which has the potential to compromise their inherent value; and
- Measures may negatively impact the historical landscape character of an area, while protecting a particular asset.

9.4.1 Scoping

Based on the key topic issues identified, it was possible to determine which sustainability themes associated with Cultural, architectural and archaeological heritage are most relevant to the Strategies and where the most significant likely effect might be.

44 http://www.merton.gov.uk/

45 https://www.sutton.gov.uk/index.aspx?articleid=1

46 London Borough of Richmond Upon Thames Core Strategy (2009)

47 The Croydon Local Plan: Strategic Policies (2013)

48 http://www.wandsworth.gov.uk/site/index.php

49 http://www.kingston.gov.uk/

50 http://www.merton.gov.uk/environment/designandconservation/statutory_listed_buildings.htm

51 London Borough of Sutton Borough Heritage Study (2009)

52 http://www.richmond.gov.uk/listed_buildings

53 http://www.croydon.gov.uk/environment/conservation/index

54 Wandsworth Borough Council Buildings of Special Architectural or Historic Interest (2012)

55 http://www.english-heritage.org.uk/publications/har-2011-registers/acc-wm-HAR-register-2011.pdf?bcsi_scan_AB11CAA0E2721250=0&bcsi_scan_filename=acc-wm-HAR-register-2011.pdf

Given that the location of flood risk measures is unknown and that their design and potential effects upon the historic environment is essentially determined during project level assessments, the SEA will focus upon any alteration to the risk of flooding within Conservation Areas as well as the occurrence of historic features identified within flood risk areas.

Table 9.2 sets out the scoping conclusions of the sustainability themes considered under the Cultural, Architectural and Archaeological Heritage topic and a reason explaining how the scoping conclusion was met for each sustainability theme.

Table 9.2: Scoping Conclusions for Cultural, Architectural and Archaeological Heritage

Sustainability Themes	Scoping (In/Out)	Reason
Scheduled Ancient Monuments (SAMs)	**In**	Due to the number of SAMs across the study area, it is likely that some are at risk from local flooding. Also potential for improved access.
Historic parks & gardens	**In**	Due to the number of historic parks and gardens across the study area, it is likely that some are at risk from local flooding. Also potential for improved access.
Conservation Areas	**In**	Due to the number of conservation areas across the study area, it is likely that some are at risk from local flooding. Also potential for improved access.
Listed Buildings	**In**	Due to the number of listed buildings across the study area, it is likely that some are at risk from local flooding. Also potential for improved access.
Key views	**In**	One key view exists in Richmond. Flood mitigation measures may potentially impact on key views.
World Heritage Sites	**Out**	One World Heritage Site within the study area but is not considered to be at risk from local flooding.
Historic farmsteads	**Out**	More appropriately addressed at a project scale.
Archaeology	**Out**	More appropriately addressed at a project scale.
Local areas of special character (LASC)	**Out**	More appropriately addressed at a project scale when detailed information concerning design of flood measures is available.
Strategic areas of special character (SASC)	**Out**	More appropriately addressed at a project scale when detailed information concerning design of flood measures is available.

9.5 SEA objectives and indicators

Based upon the current baseline of cultural and historical assets and key issues identified, the following SEA objectives are proposed against which the Strategies will be assessed:

- Conserve and enhance the historic environment and heritage assets of historic, archaeological and architectural importance and their settings.

The indicators to be used are:

- Number/area of designated heritage assets at risk of local flooding;
- Number/area of Conservation Areas which have changed as a result of the Strategies; and
- Number of listed buildings on the 'at risk' register at risk from flooding.

10 SEA FRAMEWORK AND NEXT STEPS

The following table outlines the proposed SEA framework summarising the findings of the previous chapters. It provides a means by which the likely significant environmental effects of the Strategies can be assessed and has been derived from the key topic issues identified for the area and the key environmental objectives identified in the policy review. The Scoping Report will be issued to statutory consultees including English Heritage, Natural England and the Environment Agency. Following a six week consultation period comments will be addressed and reported within the Environmental Reports, whereby one Environmental Report will be produced for each of the six Boroughs of the South West London Flood Group.

Table 10.1: SEA Key Topic Issues, Objectives and Potential Indicators

Sea Theme	Key Topic Issues	SEA Objectives	Potential Indicators
Deprivation			
Address cycle of deprivation	• Risk of flooding may act as a barrier for business investment	• To contribute towards reducing flood risk affecting vulnerable residents, such deprived areas • To assist in reducing the barriers to economic regeneration and thus assist in reducing area deprivation	• Number of measures located in areas with an above average level of deprivation • Number of properties / businesses at risk of flooding
Public Health			
Elderly safety Emotional Stress Physical injuries Spread of disease and exposure to contaminated water	• Drowning, injuries and falls • Respiratory disease, shock hypothermia and cardiac arrest • Contact with polluted waters and damp conditions leading to wound infections, dermatitis, conjunctivitis, gastrointestinal illness, ear/nose/throat infections and the possibility of serious waterborne diseases • Perceived level of flood risk and fear of flooding	• To enhance human health and wellbeing through reducing local flood risk • To raise awareness and understanding of the flood risk and dangers associated with flooding • To contribute towards reducing flood risk affecting vulnerable residents, such as elderly people	• Number of flood incidents reported • Number of flood related injuries/fatalities • Number of measures located in areas with an above average number of elderly people

	• Elderly and less mobile populations are at increased risk • Physical and emotional stress due to loss of property, evacuation and disturbances as a result of injury.		
Biodiversity			
Nationally designated sites Locally designated sites Non-designated sites Water dependent LBAP habitats and species Habitat fragmentation	• The protection of biodiversity, designated and non-designated sites from local flooding • The opportunity to create new habitats, either through mitigation or design • Irreversible changes to the hydrological balance of habitats as a result of change in land use associated with mitigation or design • Moving of flood risk or enhancing flood risk to another area	• To conserve, and where possible, enhance wildlife corridors and habitats • To enhance landscape quality and green infrastructure across the study area • To conserve and enhance the city's historic environment and heritage assets • To provide resilience to the consequences of climate change • To protect and improve the water environment	• Areas assigned for flood reduction measures that contributes to wildlife and habitat • Number of flood risk management measures delivering enhanced landscape quality and green infrastructure • Negative impacts on statutory and non-statutory ecological sites as a result of flooding
Water			
Water quality Hydromorphology	• Waterbodies are of poor or moderate ecological status, and therefore do not meet the WFD good ecological status target • All waterbodies must reach good ecological status by 2027 • Local flooding can contribute to high levels of nutrients and pollutants in WFD waterbodies • Impacts upon surface water quality, groundwater quality and hydromorphology may arise as a consequence of future flooding and potentially as a result of flood risk mitigation	• Protect and enhance where possible the water quality and hydromorphology of watercourses and WFD waterbodies	• WFD objectives achieved on watercourses where measures have been implemented • Consultation with the Environment Agency regarding ecological and chemical status of waterbodies

Community Services			
Hospitals Residential care homes Emergency services Schools	• Local flooding has caused severe disturbance to communities throughout the study area with impacts including impassable roads, residential and business property flooding, school closures and landslips • Flooding can severely reduce the public's ability to access services including water, power and telecommunications	• Minimise the adverse impacts and consequences of local flood risk on existing and future key assets, infrastructure, homes and businesses	• Number of residential and non-residential properties at risk of flooding from local sources • Number/severity/duration of incidents leading to unplanned disruption or damage to essential infrastructure and service provision
Housing			
Existing housing Housing allocations Existing and future housing design	Approximately 90,000 homes are at risk from surface water flooding from a 1 in a 100 year event (1% AEP) Location of future development can increase local flood risk elsewhere	• Minimise the adverse impacts and consequences of local flood risk on existing and future key assets, infrastructure, homes and businesses • Ensure new development is located with respect to the Sequential Test	• Number of residential and non-residential properties at risk of flooding from local sources • Number of new developments permitted in areas of flood risk
Economy			
Existing employment areas Proposed business areas	Local flooding has caused severe disturbance to communities throughout the study area with impacts including impassable roads, residential and business property flooding, school closures and landslips Location of future development can increase local flood risk elsewhere	• Minimise the adverse impacts and consequences of local flood risk on existing and future key assets, infrastructure, homes and businesses • Ensure new development is located with respect to the Sequential Test	• Number of residential and non-residential properties at risk of flooding from local sources • Number of new developments permitted in areas of flood risk
Agriculture and land use			
Open space/ parks/recreation areas	Potential damage and reduced access to national and locally important open spaces, parks and recreation areas	• Protect and enhance the quality, character and availability of open spaces and natural resources, and minimise the potential for pollution	• Number/area of open spaces at detrimental risk of local flooding • Number of measures that include enhancements to open spaces and

			recreational areas
Waste Management			
Waste management and energy recovery Recycled materials processing	Local flooding could lead to the spread of contaminants or harmful debris from waste management sites	• Minimise the adverse impacts and consequences of local flood risk on existing and future key assets, infrastructure, homes and businesses • Protect and enhance the quality, character and availability of open spaces and natural resources, and minimise the potential for pollution	• Number/severity/duration of incidents leading to unplanned disruption or damage to essential infrastructure and service provision
Water Supply and Waste Water Treatment			
Water Supply	Local flooding can severely reduce the public's ability to access services including water, power and telecommunications	• Protect and enhance the quality, character and availability of open spaces and natural resources, and minimise the potential for pollution	• Number/severity/duration of incidents leading to unplanned disruption or damage to essential infrastructure and service provision
Transport Infrastructure			
Road and rail services	Local flooding has caused severe disturbance to communities throughout the study area with impacts including impassable roads, residential and business property flooding, school closures and landslips	• Minimise the adverse impacts and consequences of local flood risk on existing and future key assets, infrastructure, homes and businesses	• Number/severity/duration of incidents leading to unplanned disruption or damage to essential infrastructure and service provision
Energy Supply			
Power and transmission networks	Local flooding can severely reduce the public's ability to access services including water, power and telecommunications	• Minimise the adverse impacts and consequences of local flood risk on existing and future key assets, infrastructure, homes and businesses	• Number/severity/duration of incidents leading to unplanned disruption or damage to essential infrastructure and service provision

Adaptation to Climate Change			
Adaptation/resilience	Climate change is predicted to increase frequency and severity of flooding in the future, further exacerbating other key topic issues	• Manage and mitigate the future effects of climate change with regard to local flooding through the adoption of sustainable flood management techniques (SuDS) in new and existing development	• Number of residential and non-residential properties at risk of flooding from local sources • Number/severity/duration of incidents leading to unplanned disruption or damage to essential infrastructure and service provision • Number of SuDS schemes adopted into existing and future developments
Cultural, Architectural and Archaeological Heritage			
Scheduled Ancient Monuments (SAMs) Historic parks and gardens Conservation Areas Listed Buildings Key Views	• Some heritage assets are likely to be at risk of flooding, and/or are reliant on water levels/flow, which has the potential to compromise their inherent value • Measures may negatively impact the historical landscape character of an area, while protecting a particular asset	• Conserve and enhance the historic environment and heritage assets of historic, archaeological and architectural importance and their settings	• Number/area of designated heritage assets at risk of local flooding • Number/area of Conservation Areas which have changed as a result of the Strategies • Number of listed buildings on the 'at risk' register at risk from flooding

You are invited to comment on this Scoping Report. Comments received will inform the approach to the environmental assessment of the proposed Strategies' measures and the preparation of the Environmental Report.

The questions below are intended as an aid to the reader.

1. Are there any additional plans, policies or programmes at the international, national, regional or local level which have been excluded from Appendix D, which your organisation feels are relevant to this SEA?
2. Do you agree with the scoped in and out topics and themes throughout this SEA?
3. Do you agree with the review of the current key topic issues across the study area? Are there particular topic issues more specific to a particular Borough which have not been covered?
4. Do you think the baseline data collected for each of the scoped in topics is appropriate and relevant?
5. Is there any missing or inaccurate baseline data?
6. Do you consider the SEA objectives and associated assessment criteria and indicators to be suitable for the Strategies?

Comments will be accepted within the six week consultation period up to 11th April 2014.

Comments may be sent to: Craig Boorman, Assistant Hydrologist at URS Infrastructure & Environment UK Limited

Via post: Scott House, Alençon Link, Basingstoke, RG21 7PP, United Kingdom

Via email: Craig.Boorman@urs.com

APPENDIX A – AIMS OF THE WATER FRAMEWORK DIRECTIVE

The WFD promotes an integral and coordinated approach to water management at the river basin scale. Its aims are to:

- Prevent deterioration in the classification status of aquatic ecosystems, protect them and improve the ecological condition of waters;
- Achieve at least 'good' status for all waters by 2015 and where this is not possible, 'good' status should be achieved by 2021 or 2027;
- Promote sustainable use of water as a natural resource;
- Conserve habitats and species that depend directly on water;
- Progressively reduce or phase out release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; and
- Contribute to mitigating the effects of floods and droughts.

APPENDIX B –Vision and Objectives of The London Plan 2011

In 2011, the Mayor of London published the spatial development strategy, otherwise known as the London Plan. Subsequently, the Draft Further Alterations to the London Plan (FALP)[56] have been published in January 2014 for a twelve week period of public consultation. It sets out a fully integrated economic, environmental, transport and social framework for the development of the capital to 2036. London Boroughs' local plans need to be in general conformity with the London Plan, and its policies guide decisions on planning applications by councils and the Mayor.

The London Plan outlines its strategy which consists of the Mayors vision for the sustainable development of London over the planning period. The vision is supported by the following six objectives:

Objective 1: A city that meets the challenges of economic and population growth in ways that ensure a sustainable, good and improving quality of life and sufficient high quality homes and neighbourhoods for all Londoners and help tackle the huge issue of deprivation and inequality among Londoners, including inequality in health outcomes.

Objective 2: An internationally competitive and successful city with a strong and diverse economy and an entrepreneurial spirit that benefit all Londoners and all parts of London; a city which is at the leading edge of innovation and research and which is comfortable with – and makes the most of – its rich heritage and cultural resources.

Objective 3: A city of diverse, strong, secure and accessible neighbourhoods to which Londoners feel attached, which provide all of its residents, workers, visitors and students – whatever their origin, background, age or status – with opportunities to realise and express their potential and a high quality environment for individuals to enjoy, live together and thrive.

Objective 4: A city that delights the senses and takes care over its buildings and streets, having the best of modern architecture while also making the most of London's built heritage, and which makes the most of and extends its wealth of open and green spaces, natural environments and waterways, realising their potential for improving Londoners' health, welfare and development.

Objective 5: A city that becomes a world leader in improving the environment locally and globally, taking the lead in tackling climate change, reducing pollution, developing a low carbon economy, consuming fewer resources and using them more effectively.

Objective 6: A city where it is easy, safe and convenient for everyone to access jobs, opportunities and facilities with an efficient and effective transport system which actively encourages more walking and cycling, makes better use of the Thames and supports delivery of all the objectives of the Plan.

56 http://www.london.gov.uk/priorities/planning/london-plan/draft-further-alterations-to-the-london-plan

APPENDIX C – Relevant Water Framework Directive Waterbodies Status and Objectives'

Waterbody ID	Waterbody Name	Hydro-morphological Designation	Current Status	Ecological Status	WFD elements less than Good	Status Objective
London management catchment						
GB106039023460	Wandle (Croydon to Wandsworth) and the R. Gravney	Heavily Modified	Poor	Poor	Fish, Invertebrates, Macrophytes, Phytobenthos, Phosphate	Good Potential by 2027
GB106039017640	Wandle (Carshalton Branch at Carshalton)	Heavily Modified	Poor	Poor	Fish, Hydrology	Good Potential by 2027
GB106039023030	Crane (including part of the Yeading Brook)	Heavily Modified	Poor	Poor	Fish, Invertebrates, Macrophytes, Phytobenthos, Phosphate	Good Potential by 2027
GB106039023250	Pool River	Heavily Modified	Moderate	Moderate	Fish, Invertebrates	Good Potential by 2027
GB106039022850	Beverley Brook (Motspur Park to Thames) and Pyl Brook at West Barnes	Heavily Modified	Poor	Poor	Fish, Invertebrates, Macrophytes, Phytobenthos, Ammonia, Phosphate, Specific Pollutants, Hydrology	Good Potential by 2027
GB106039017440	Hogsmill	Heavily Modified	Moderate	Moderate	Fish, Invertebrates, Ammonia, Phosphate, Specific Pollutants	Good Potential by 2027
Maidenhead to Sunbury management catchment						
GB106039023232	Thames (Egham to Teddington)	Heavily Modified	Poor	Poor	Phytobenthos, Phosphate	Good Potential by 2027

APPENDIX D – POLICY CONTEXT REVIEW

Plan	Key Messages	SEA Topics
International		
SEA Directive (2001) Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment	Contributes to the high level environmental protection and the consideration of environmental issues in the preparation and adoption of plans and programmes with the intent of promoting sustainable development.	All
The Johannesburg Declaration of Sustainable Development (2002)	Commits the nations of the world to sustainable development.	All
Arhus Convention (1998) (Convention on Access to Information, Public Participation in decision – making and Access to Justice in environmental Matters)	Links environmental rights and human rights. Acknowledges that we owe an obligation to future generation. Establishes that sustainable development can be achieved only through the involvement of all stakeholders. Links government accountability and environmental protection. Focuses on interactions between the public and public authorities in a democratic context.	All
Convention on Biological Diversity[57] (1992)	Sets the target to achieve by 2010 a significant reduction of the current rate of biodiversity loss. The Strategic Plan for Biodiversity 2011-2020, including Aichi Biodiversity Targets, forms the overarching framework on biodiversity.	Biodiversity
The Habitats Directive (92/43/EEC)[58]	Requires the protection of species and habitats of EU nature conservation designation. The Directive requires that development can only be allowed where it does not impact on important sites that protect habitats otherwise compensation measures must be put in place.	Biodiversity
The Birds Directive	Provides for the protection of all naturally occurring wild bird species and their habitats, with particular protection of rare species. The Directive requires that measures are taken to	Biodiversity

57 For further information visit: http://www.cbd.int/default.shtml

58 Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna accessible via: http://ec.europa.eu/environment/nature/legislation/habitatsdirective/

2009/147/EC (codified version of 79/409/EEC)[59]	preserve, maintain or re-establish a diversity of habitats for all the birds listed in Article I.	
Our life insurance, our natural capital: an EU biodiversity strategy to 2020 COM(2011) 244 final	Headline target is to halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and to restore them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.	Biodiversity
The European Landscape Convention 2000 (signed 2006)[60]	Promotes various actions at the landscape scale ranging from strict conservation through protection, management and improvement to creation.	Biodiversity, Material Assets and Cultural Heritage
Air Quality Directive (2008/50/EC)[61] and Air Quality Standards Regulations (2010) [62]	The Directive on ambient air quality and cleaner air merged most existing legislation in to a single directive and sets limits for concentrations of pollutants in outdoor air. The Air Quality Standards Regulations (2010) transpose into English law the requirements of Directives 2008/50/EC and 2004/107/EC on ambient air quality.	Air, Human Health, Biodiversity
The Industrial Emissions Directive (2010) Directive 2010/75/EU on Industrial Emissions (Integrated Pollution Prevention and Control)	Provides rules for the delivery of integrated prevention and pollution of pollution arising from industrial activities designed to prevent or, where not practical, reduce emissions into air, water and land as well as to prevent the generation of waste to achieve a high level of protection of the environment. Emission limit values are set for substances harmful to air or water.	Not applicable
The Water Framework Directive (2000/60/EC)[63]	Promotes an integral and coordinated approach to water management at the river basin scale. Also encourages protection of soil and biodiversity. It aims to: Prevent deterioration of aquatic ecosystems and associated wetlands; Promote the sustainable use of water; Reduce pollution of water; and introduce a co-ordinated approach to water management based on the concept of river basin planning.	Biodiversity, Water
The Drinking Water Directive (1998) Directive 98/83/EC on the quality of water intended for human	Seeks to protect public health by reducing the risk of the contamination of water intended or human consumption. Member States to set values for water intended for human consumption.	Water

59 Council Directive 2009/147/EC on the conservation of wild birds (codified version of 79/409/EEC)
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:020:0007:0025:EN:PDF
60 http://www.coe.int/t/dg4/cultureheritage/heritage/Landscape/default_en.asp
61 Air Quality Directive 2008/50/EC: http://ec.europa.eu/environment/air/quality/legislation/existing_leg.htm
62 Regulations transposing the Air Quality Directive are at: http://www.legislation.gov.uk/uksi/2010/1001/regulation/1/made
63 Directive 2000/60/EC of the European Parliament and the Council establishing a framework for the Community action in the field of water policy accessible via: http://ec.europa.eu/environment/water/water-framework/

consumption		
The Floods Directive (2007/60/EC) on the assessment and management of flood risks	Aims to reduce and manage the risks that floods pose to human health, environment, cultural heritage and economic activity. Requires Member States to undertake a preliminary assessment by 2011 to identify the river basins and associated coastal areas at risk of flooding. Where necessary flood risk maps are to be produced by 2013 with flood risk management plans focused on prevention, protection and preparedness being in place by 2015.	Water, Human Health, Biodiversity, Cultural Heritage
Urban Wastewater Treatment Directive (1991) [64]	Aims to protect the environment from the adverse effects of wastewater discharges through a requirement for the secondary treatment of urban wastewater.	Water
The Nitrates Directive (1991) Directive 91/676/EEC on nitrates from agricultural sources	Seeks reduction of water pollution caused or induced by nitrates from agricultural sources and prevent further pollution.	Water
Directive 99/31/EC, Landfill Regulations (2002) and Amendment (2005)[65]	Prevents or reduces the negative effects from the landfilling of wastes upon the environment through various technical requirements. Also sets targets for the reduction of biodegradable wastes placed in landfill to 50% of the 1995 level in 2013 and 35% by 2020.	Not applicable
The Waste Framework Directive (2008), Hazardous Waste Directive (1991) IPPC Directive (1996) and Landfill Directive (1999)[66]	Aims to ensure that all necessary measures have been taken to ensure that waste is recovered or disposed of without causing harm to human health or the environment	Human Health
The Packaging and Packaging Waste Directive (1994) Directive 94/62/EC on packaging and packaging waste	Seeks to reduce the environmental impact of packaging wastes by the harmonisation across Europe. Sets recovery rates for packaging materials	Not applicable
World Heritage Convention (1972) [67]	Calls for the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage sites.	Cultural Heritage

64 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1991L0271:20081211:EN:PDF

65 Council Directive 99/31/EC on the landfill of waste and the landfill (England and Wales) Regulations 2002 and Amendment Regulations 2005 accessible via: http://www.opsi.gov.uk/SI/si2002/20021559.htm

66 Access to these directives is via: http://ec.europa.eu/environment/waste/legislation/a.htm

67 http://whc.unesco.org/en/conventiontext

The Convention for the Protection for the Architectural Heritage of Europe (The Granada Convention)[68]	The main purpose of the Convention is to reinforce and promote policies for the conservation and enhancement of Europe's heritage. It also affirms the need for European solidarity with regard to heritage conservation and is designed to foster practical co-operation among the Parties. It establishes the principles of "European co-ordination of conservation policies" including consultations regarding the thrust of the policies to be implemented.	Cultural Heritage
The European Convention on the Protection of Archaeological Heritage (The Valetta Convention)[69]	The revised Convention updates the provisions of a previous Convention (ETS No. 66) adopted by the Council of Europe in 1969. The new text makes the conservation and enhancement of the archaeological heritage one of the goals of urban and regional planning policies. It is concerned in particular with arrangements to be made for co-operation among archaeologists and town and regional planners in order to ensure optimum conservation of archaeological heritage. The Convention sets guidelines for the funding of excavation and research work and publication of research findings. It also deals with public access, in particular to archaeological sites, and educational actions to be undertaken to develop public awareness of the value of the archaeological heritage.	Cultural Heritage
Adapting to Climate Change: Towards a European framework for Action (2009)	Promote strategies that increase the resilience to climate change of health, property and the productive functions of land, inter alia by improving the management of water resources and ecosystems. Framework for adaptation measures and policies to reduce the European Union's vulnerability to the impacts of climate change. The White Paper outlined the need for establishing a Clearing House Mechanism by 2011 that would enable exchanging information on climate risks, impacts and best practices between government, agencies and organisations working on adaptation policies.	Climate Change
National		
Flood Risk Regulations (2009) (SI 3042)	Sets duty on Environment Agency and lead local flood authorities to prepare preliminary assessment maps and reports for river basin districts and flooding. A further duty is to identify flood risk areas and prepare flood risk management plans.	Not applicable
Flood and Water Management Act	The Act Section 21 sets a duty on the Lead Local Flood Authority (LLFA)[71] to maintain a	Not applicable

68 http://conventions.coe.int/Treaty/Commun/QueVoulezVous.asp?NT=121&CM=1&CL=ENG

69 http://conventions.coe.int/Treaty/Commun/QueVoulezVous.asp?NT=143&CM=1&CL=ENG

(2010)[70]	register of structures or features, and a record of information about each of those structures or features, which, in the opinion of the authority, are likely to have a significant effect on flood risk in its area helping to improve our understanding and management of local flood risk. Section 30 allows the Environment Agency, LLFAs and Internal Drainage Boards (IDBs) to designate natural or artificial features that are important for flood or coastal erosion risk management. The effect of a designation is that a feature may not be altered, replaced or removed without consent. A new regulation will require all LLFA's to asses all drainage designs prior to construction to determine whether the design meets national sustainable drainage standards.	
National Flood and Coastal Erosion Risk Management (FCERM) Strategy for England (2011)[72]	Sets out a statutory framework that will help communities, the public sector and other organisations to work together to manage flood and coastal erosion risk. Aim is to ensure that flooding and coastal erosion risks are well-managed and co-ordinated. The strategy covers flooding from the sea, rivers, surface water, sewers, groundwater and reservoirs.	Not applicable
Guidance for risk management authorities on sustainable development in relation to their flood and coastal erosion risk management (Defra, 2011)[73].	Provides guidance on how authorities can contribute towards achievement of sustainable development when exercising flood and coastal erosion risk management functions, as required by the Flood and Water Management Act (2000)	Not applicable
Appraisal of flood and coastal erosion risk management (Defra, 2009)[74]	Sets out the principles that should guide decision making on the sustainable management of flood and coastal erosion risk in England. In particular it emphasises the need to ensure that appraisals for all activity (whether strategic level plans or individual projects): • Give more consideration to 'risk management' and 'adaptation', as opposed to only 'protection' and 'defence'; • Are undertaken consistently, transparently, with value for money in mind and in a way that complies with the Treasury guidance on appraisal and evaluation in central Government (The Green Book);	Not applicable

71 The Unitary or County Council for the area.

70 http://www.legislation.gov.uk/ukpga/2010/29/contents

72 http://www.environment-agency.gov.uk/research/policy/130073.aspx

73 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69447/pb13640-sdg-guidance.pdf

74 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69419/pb13278-erosion-manage-090619.pdf

	• Help achieve better social and environmental outcomes as part of sustainable development, both by considering a broader range of issues and by using a broader range of analysis techniques; • Adopt a risk-based approach, whilst considering impacts within the whole of a catchment or shoreline process area.	
Future Water – The Government's Water Strategy for England (Defra, 2008)[75]	Recognises that poor surface water management can cause water quality problems. The Government vision for water policy and management is one where, by 2030 at the latest, we have: • Improved the quality of our water environment and the ecology which it supports, and continued to provide high levels of drinking water quality from our taps. • Sustainably managed risks from flooding and coastal erosion, with greater understanding and more effective management of surface water. • Ensured a sustainable use of water resources, and implemented fair, affordable and cost reflective water charges. • Cut greenhouse gas emissions. • Embedded continuous adaptation to climate change and other pressures across the water industry and water users.	Water
Groundwater Protection Policy & Practice (EA, 2006)	Protection of groundwaters.	Water
Groundwater (England and Wales) Regulations (2009) [76]	Seeks to prevent or limit the input of pollutants into groundwater.	Water
Water Act 2003[77]	Encourage more efficient use of water resources	Water
Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (SI 3242)	• Aims to improve water quality and promote the sustainable use of all UK waterbodies, including coastal waters, estuaries and all inland waterbodies; • It requires all UK river basins to reach "good status" by 2015, through demanding environmental objectives, including chemical, biological and physical targets; • Charged the Environment Agency with production of River Basin Management Plans to be implemented by end of 2009;	Water, Biodiversity

75 http://www.official-documents.gov.uk/document/cm73/7319/7319.pdf?bcsi_scan_AB11CAA0E2721250=0&bcsi_scan_filename=7319.pdf

76 http://www.legislation.gov.uk/uksi/2009/2902/pdfs/uksi_20092902_en.pdf

77 http://www.legislation.gov.uk/ukpga/2003/37/contents

	• Three types of UK water quality standards are being developed (a formal classification instrument should be completed in late 2007): Priority substances (and Priority Hazardous Substances); Specific Pollutants; and Physico-chemical pollutants.	
Water for Life White Paper (2011)	Recognises that water resources are already under pressure and that future changes such as climate change and demographic change, will exert further pressure. Government objectives include: • Paint a clear vision of the future and create the conditions which enable the water sector and water users to prepare for it • Deliver benefits across society through ambitious agenda for improving water quality, working with local communities to make early improvements on the health of our rivers by reducing pollution and tackling unsustainable abstraction • Work with water companies, regulators and other stakeholders to build understanding of the impact personal choices have on the water environment, water resources and costs; • Set out roles and responsibilities – including where Government will take a stronger role in strategic direction setting and assessing resilience to future challenges, as well as clear expectations on the regulators.	Water, Biodiversity
Strategic Framework and Policy Statement on Improving the Resilience of Critical Infrastructure to Disruption from Natural Hazards (2010)	Sets approach to managing risk to infrastructure: • Build a level of resilience into critical infrastructure assets that ensures continuity during a worst case flood event. • Considering the threat from current and future natural hazards in the design of new assets. • Increase the robustness and resilience of existing services or assets by building additional network connections. • Identifying key components and moving them out of harm's way. • Improved arrangements for sharing of information on infrastructure network performance and standards. • Enhancing skills and capabilities to respond to emergencies arising from natural hazards.	Material Assets
National Infrastructure Plan (2010) [78]	Forecasts a 20% increase in congestion by 2025 and requires a change to how infrastructure is planned, coordinated and delivered with adaptation to provide security and resilience. Private sector capital is to be attracted and the cost of capital for projects needs to be reduced.	Material Assets

78 HM Treasury, 2010: National Infrastructure Plan. Available at: http://www.hm-treasury.gov.uk/ppp_national_infrastructure_plan.htm

Consultation Draft Waste Management Plan for England (2013)	Aims to deliver the objectives of the revised Waste Framework Directive: to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such waste. There are comprehensive waste management policies in England, which taken together deliver the above objectives, the core of this policy is therefore to bring current policies under the umbrella of one national plan.	Material Assets
Climate Resilient Infrastructure: Preparing for a Changing Climate (May, 2011	A strategic approach to adapting national infrastructure that can be replicated at the sub-regional and local level by local authorities and the new Local Enterprise Partnerships (LEPs) (see paragraph 3.4.6) is described.	Material Assets
UK Climate Impacts Programme (2009)	Updated climate change projections based on three global emission scenarios provide forecasts for a climate and weather related impacts.	Material Assets
Climate Change: The Climate Change Act (2008) [79]	Requires that the average annual emissions in the carbon budget period including the year 2020 (i.e. the third period, 2018-2022) are at least 34% below the 1990 baseline. This is a 34% reduction by 2020. The 2008 Planning Act placed a duty on local authorities to include policies on climate mitigation and adaptation.	Material Assets
National Adaptation Plan (2013)	Meets the requirements of the Climate Change Act (2008). Objectives have been developed to address the greatest risks and opportunities: • Increasing awareness; • Increasing resilience to current extremes; • Taking timely action for long-lead time measures; and • Addressing major evidence gaps.	Material Assets
The Wildlife & Countryside Act (1981) as amended (most notably by the Countryside and Rights of Way (CRoW) Act[80] (2000)	Principal instrument for the protection of Sites of Special Scientific Interest and endangered wildlife within the UK. The CRoW Act aims for increased public access to the countryside and strengthens protection for wildlife.	Biodiversity

79 Available online at: http://www.opsi.gov.uk/acts/acts2008/ukpga_20080027_en_1 (accessed 18 February 2014)

80 http://www.jncc.gov.uk/page-1377

Biodiversity 2020: A Strategy for England's wildlife and ecosystem services (2011)[81]	Ensures biodiversity considerations become embedded in all the main sectors of economic activity, public and private. It sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea.	Biodiversity
Making Space for Nature: A Review of England's Wildlife Sites and Ecological Network (Defra, 2010)	Sets out five approaches to deliver a coherent, resilient ecological network: • improve the quality of current site by better habitat management; • increase the size of current wildlife sites; • enhance connections between, or join up, sites wither through physical corridors, or though 'stepping tones'; • create new sites; and • reduce the pressures on wildlife by improving the wider environment, including through buffering wildlife sites.	Biodiversity
The Natural Choice: Securing the Value of Nature. The Natural Environment White Paper. (HM Government, 2011)	Sets out the Government's plans to ensure the natural environment is protected and fully integrated into society and economic growth. Sets out four key aims: • protecting and improving our natural environment; • growing a green economy; • reconnecting people and nature; and • international and EU leadership.	Biodiversity
UK National Ecosystem Assessment (2011)	The first analysis of the UK's natural environment and the benefits it provides to society and economic prosperity. The assessment leads on from the Millennium Ecosystem Assessment (2005) analyses services provided by ecosystem against eight broad habitat types. The ecosystem services provided by these habitat types have been assessed to find their overall condition.	Biodiversity
Ancient Monuments and Archaeological Areas Act (1979) [82]	Provides for nationally important archaeological sites to be statutorily protected as "Scheduled Ancient Monuments" (now Scheduled Monuments)/	Cultural Heritage
Planning (Listed Buildings and Conservation Areas) Act (1990) [83]	Provides specific protection for buildings and areas of special architectural or historic interest	Cultural Heritage

81 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf

82 http://www.legislation.gov.uk/ukpga/1979/46

The Government White Paper: Heritage Protection for the 21st Century (2007)[84]	To put the historic environment at the heart of the planning system.	Cultural Heritage
The Historic Environment: A Force for Our future (2001)	Sets out the intention to protect the historic environment as in contribution to the economy.	Cultural Heritage
Climate Change and the Historic environment (2008)	Sets out English Heritage's current views on the implications of climate change for the historic environment. It recognises that adaptations and mitigation to address the causes and consequences of climate change can have a damaging effect on historic buildings, sites and landscapes.	Cultural Heritage
The UK Climate Change Programme (2006)[85] and the Climate Change Act (2008)[86]	A suite of new and established measures to reduce UK carbon emissions to 15-18% below 1990 levels by 2010. Also promotes anticipatory adaptation. The Climate Change Act legislates for climate change mitigation and adaption. It sets the requirements for the Climate Change Risk Assessment, the National Adaptation Programme and the Adaptation Reporting Power.	Biodiversity, Material Assets and Cultural Heritage
Countryside and Rights of Way Act (2000)	Provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases protection for Sites of Special Scientific Interest and strengthens wildlife enforcement legislation as well as provides for the management of Areas of Outstanding Natural Beauty.	Biodiversity, Human Health
Waste Strategy for England (2007)[87]	Promotes best practicable environmental option (BPEO), the waste hierarchy and the proximity principle. The strategy sets out an overall objective for England to achieve less waste, more material recovery, energy from waste and much less landfill.	Material assets
Healthy Lives: Healthy People: Our Strategy for Public Health in England	Helping people live longer and reduce health inequalities.	Human Health

83 http://www.legislation.gov.uk/ukpga/1990/9/contents

84 https://www.gov.uk/government/publications/heritage-protection-for-the-21st-century-white-paper

85 http://jncc.defra.gov.uk/pdf/BRAG_CC_ClimateChangeTheUKProgramme.pdf

86 http://www.legislation.gov.uk/ukpga/2008/27/contents

87 http://archive.defra.gov.uk/environment/waste/strategy/strategy07/documents/waste07-strategy.pdf

(Department of Health, 2010)		
Natural Environment and Rural Communities Act (2006)[88]	Promote and enhance biodiversity. The Act stresses that biodiversity conservation should not be viewed solely as an environmental issue, but a core component of sustainable development, which underpins economic development and prosperity and offers a range of quality of life benefits across a range of local authority service areas.	Biodiversity
National Planning Policy Framework (2012)[89]	Sets out how planning should contribute to sustainable development. The Government is committed to protecting and enhancing the quality of the natural and historic environment, in both rural and urban areas. A high level of protection should be given to most valued townscapes and landscapes, wildlife habitats and natural resources. Those with national and international designations should receive the highest level of protection. Development plan policies should take account of environmental issues such as the potential impact of the environment on proposed developments by avoiding new development in areas at risk of flooding, and as far as possible, by accommodating natural hazards and the impacts of climate change.	All
	Proactive strategies should be adopted to mitigate and adapt to climate change, taking full account of flood risk and water supply and demand considerations.	Biodiversity, Material Assets and Cultural Heritage
	The planning system should contribute to and enhance the natural and local environment by: • recognising the wider benefits of ecosystem services; • minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.	Biodiversity
	Heritage assets are an irreplaceable resource and should be conserved in a manner appropriate to their significance.	Cultural Heritage, Material Assets
	Access to high quality open spaces and opportunities for sport and recreation can make an	Biodiversity, Human Health, Material

88 http://www.legislation.gov.uk/ukpga/2006/16/contents

89 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

	important contribution to the health and well-being of communities.	Assets and Cultural Heritage
	The planning system should contribute to and enhance the natural and local environment by: • preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability	Water
	Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. Local Plans should apply a sequential, risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change.	Biodiversity, Cultural Heritage, Material Assets, Water
Laying the Foundations: A Housing Strategy for England (DCLG, 2011)	Supports the delivery of new homes and improvement of social mobility.	Material Assets
Delivering Affordable Housing (DCLG, 2006)	Supports local authorities and others in delivering high quality affordable housing within mixed sustainable communities.	Not applicable
Planning Policy for Traveler Sites (DCLG, 2012)	Set out the following Government aims for traveler sites: • That local planning authorities should make their own assessment of need for the purpose of planning; • Ensure that local planning authorities work collaboratively to develop strategies to meet needs through the identification of land for traveler sites.	Not applicable
Securing the Future: UK Government Sustainable Development Strategy (2005)[90]	This replaced an earlier strategy published in 1999 and aims to enable people to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations	All
Rural White Paper (2000) Our Countryside: The Future – A fair Deal for	Promotes sustainable rural economies with the objective of maintaining and stimulating	Not applicable

90 https://www.gov.uk/government/publications/securing-the-future-delivering-uk-sustainable-development-strategy

Rural England.	secure access to services and employment as well as conserving and enhancing rural landscapes.	
Urban White Paper (2000) Our Towns and Cities: The Future – Delivering an Urban Renaissance	Seeks to encourage more sustainable and attractive urban areas to retain people in urban areas. Sets target of 60% of new homes to be on brownfield sites.	All
The UK Renewable Energy Strategy (DECC, 2009)	Promotes increased use of renewable electricity and heat as well as promotes a low-carbon economy, energy security to address climate change. Sets target of 15% of energy to be from renewable sources by 2020 with reduced CO_2 emissions by 750 Mt by 2030.	Material assets
Regional		
The London Plan (2011)	. London Boroughs' local plans need to be in general conformity with the London Plan, and its policies guide decisions on planning applications by councils and the Mayor. Strategic planning in London is the shared responsibility of the Mayor of London, 32 London boroughs and the Corporation of the City of London. Under the legislation establishing the Greater London Authority (GLA), the Mayor has to produce a spatial development strategy (SDS) – which has become known as 'the London Plan' – and to keep it under review. It is the overall strategic plan for London, setting out a fully integrated economic, environmental, transport and social framework for the development of London to 2036. Boroughs' local development documents have to be 'in general conformity' with the London Plan, which is also legally part of the development plan that has to be taken into account when planning decisions are taken in any part of London unless there are planning reasons why it should not.	All
All London Green Grid Supplementary Planning Guidance (SPG) (2012)	Aims to promote the concept of green infrastructure, and increase its delivery by boroughs, developers, and communities, by describing and advocating an approach to the design and management of green and open spaces to deliver hitherto unrealised benefits. These benefits include sustainable travel, flood management, healthy living, and creating distinctive destinations; and the economic and social uplift these support.	Biodiversity, Material Assets and Cultural Heritage
Open Space Strategies Best Practice	Best practice guidance to the London Plan on the methodology and content of an Open	Biodiversity, Material Assets and Cultural

Guidance (BPG) (2004)	Space Strategy within the London context. It provides advice on assessing the quantity and quality of open spaces and in identifying the needs of local communities and other users of open spaces. It also suggests ways of promoting open space improvements, including funding, the use of planning obligations and how to effectively engage the local community and establish collaborative partnerships.	Heritage
London Rivers Action Plan (2009)	Provides a delivery mechanism to take forward London's river restoration strategies - "River restoration - a stepping stone to urban regeneration highlighting the opportunities in South London" (2002). The main aim of the LRAP is to provide a forum for identifying stretches of river that can be restored. This can be done by improving river channel or riparian habitats, by removing or modifying flood defence structures where safe to do so, or by reclaiming 'lost' rivers currently buried under the Capital's surface.	Biodiversity, Water
Securing London's Water Future. The Mayors Water Strategy (2011)	The Mayor's Water Strategy is intended to complement the plans and strategies of other organisations, including the national water strategy, by presenting a London specific view of water management. Its goal is improved water management in terms water supply, wastewater and flooding. Its objectives are: • To use the water London already has more effectively and efficiently. • To minimise the release of untreated wastewater and diffuse pollution into the water environment. • To manage, and where possible reduce, the threat of flooding to people and their property. • To reduce the greenhouse gas emissions produced from supplying water and treating wastewater.	Water
Thames Catchment Flood Management Plan (2009)	Produced by the Environment Agency, they give an overview of the flood risk across each river catchment and recommend ways of managing those risks now and over the next 50-100 years. All types of inland flooding are considered, such as flooding from rivers, ground water, surface water and tidal flooding. The plans take into account the likely impacts of climate change, the effects of water usage and how areas could be developed to meet present day needs without compromising the ability of future generations to meet their own needs.	Water and Material Assets

TE2100 Flood Risk Management Plan (2012)	The Thames Estuary 2100 project was established by the Environment Agency in 2002 with the aim of developing a strategic flood risk management plan for London and the Thames estuary through to the end of the century. Primarily looks at tidal flooding, though other sources of flooding including high river flows as a result of heavy rainfall and surface water flooding are considered. The key driver was to consider how tidal flood risk was likely to change in response to future changes in climate and people and property in the floodplain. It makes recommendations on what actions are needed to adapt to a changing estuary.	Water and Material Assets
Thames River Basin Management Plan (RBMP) (2009)	The plan describes the river basin district, and the pressures that the water environment faces. It shows what this means for the current state of the water environment, and what actions will be taken to address the pressures. It sets out what improvements are possible by 2015 and how the actions will make a difference to the local environment – the catchments, the estuaries and coasts, and the groundwater.	Water
London Biodiversity Action Plan 2015-20	Identifies priority habitats that are of particular importance for biodiversity in London. The London BAP contains targets to enhance and to increase the extent of priority habitats found in the capital by 2015 and by 2020. These targets have been incorporated into the London Plan.	Biodiversity
Development Plan Policies for Biodiversity Best Practice Guidance (BPG) (2005)	This Best Practice Guidance is intended to assist boroughs with the preparation of planning policy for biodiversity in Local Development Documents (LDDs). Biodiversity should be considered at the very start of the process when developing a vision and objectives for the borough in plans and policies, including the Community Strategy. LDDs must be in general conformity with the London Plan. The model policies in this guide are designed to assist boroughs in ensuring that development plans meet this requirement in respect of biodiversity.	Biodiversity
The Mayor's Biodiversity Strategy – Connecting with London's Nature (2002)	Aims to protect and enhance the natural habitats of London together with their variety of species. The Strategy sets out the Mayor's vision for the future, identifying the key issues and providing innovative solutions. It demonstrates how London's biodiversity can be maintained as a crucial part of a sustainable world city.	Biodiversity

Revised London Housing Strategy (2011)	Seeks to offer a comprehensive overview of housing, encompassing not just affordable housing, but housing across all tenures, and not just housing delivery programmes, but meeting housing need in its broadest sense.	Material Assets
The Mayor's Transport Strategy (2010)	A statutory document, developed alongside the London Plan and Economic Development Strategy as part of a strategic policy framework to support and shape the economic and social development of London over the next 20 years. It sets out the Mayor's transport vision and describes how Transport for London (TfL) and its partners, including the London boroughs, will deliver that vision.	Material Assets
The Mayor's Economic Development Strategy (2010)	Sets out the Mayor's vision with respect to London's economy. To encourage the conditions and business environment in which London's economy can thrive, continued investment in the capital and resisting changes that would damage its open and dynamic environment, encourage businesses and organisations to work together and to pool resources towards common goals, maintain and enhance the conditions that allow the people and communities of London to use the creativity and initiative that have contributed so much to London's success.	Material Assets
The Mayor's Municipal Waste Management Strategy (2011)	Provides a framework of policies and proposals to ensure London makes an effective contribution towards meeting the UK's commitments under the Landfill Directive 1999. The Mayor's policies and proposals contained in the strategy provide a clear lead to London's waste authorities on the actions it is expected they will need to undertake to meet the Mayor's objectives and targets for London's municipal waste management.	Material Assets
South London Waste Plan (2012)	Sets out the partner boroughs' (Croydon, Kingston Upon Thames, Merton and Sutton) long-term vision, spatial strategy and policies for the sustainable management of waste over the next 10 years. The Waste Plan contains policies to promote the adequate provision of modern, high quality, clean and well-run waste management facilities (including for disposal) on the most suitable sites and areas in the partner boroughs.	Material Assets
Local		

The Croydon Local Plan: Strategic Policies (2013)	Formerly known as the core strategy. This comprises Croydon's local plan: strategic policies, the Mayor's London plan, the saved policies from Croydon's unitary development plan (UDP) of 2006 and the South London waste plan. The strategic policies are the first part of the Croydon local plan. They provide the strategic direction and support the plan's vision for enabling future development in the Borough from now until 2031, in terms of homes, shops, jobs, schools, hospitals, leisure and recreation. The Croydon local plan: strategic policies development plan document (DPD), also includes policy for the protection and conservation of natural and built environment and response to the impacts of climate change.	All
London Borough of Sutton Core Planning Strategy (2009)	The Core Planning Strategy sets out the Council's long-term vision, spatial strategy and core policies for shaping the future development of the Borough and managing change over the next 15 years in line with the principles of sustainable development. The Vision of Sutton as a sustainable suburb within London is underpinned by five Themes, and have been translated into a set of 19 Strategic Objectives. The five themes include; • Developing Active, Healthy and Inclusive Communities. • Achieving Environmental Sustainability. • Encouraging Enterprise and Employment. • Promoting Sustainable Transport and Accessibility. • Improving the Streetscene and Living Environment. Sutton Town Centre, Hackbridge and Wallington have been identified as areas for growth and regeneration.	All
London Borough of Merton Core Planning Strategy (2011)	The Core Strategy sets out the spatial strategy for the borough and the key elements of the planning framework. It brings together other strategies that cover Merton - such as the Neighbourhood Renewal Strategy, Open Space Strategy and the NHS "Better healthcare, closer to home" strategy to provide a co-ordinated long term spatial vision and means to deliver that vision. Merton's Spatial Vision is to be a leader in addressing the challenges of climate change	All

	and have tackled imbalances between different parts of Merton, while protecting what is good and valued. There are eight Strategic Objectives and associated principles. Wimbledon, Mitcham, Morden and Colliers Wood have been identified as areas for growth and regeneration.	
London Borough of Richmond Upon Thames Core Strategy (2009)	The strategy starts from an overall vision of what the plan is trying to achieve. A series of objectives build on the vision for different types of development and for different parts of the Borough. These form the basis for the strategic policies aimed at ensuring the objectives are implemented. The Local Development Framework vision has 3 inter-related themes of 'A Sustainable Future', 'Protecting Local Character' and 'Meeting People's Needs'. The three themes are continued and linked through the Core Strategy. • Sustainable future: Six core polices including adapting to climate change and biodiversity. • Protecting Local Character: Six core policies including maintaining and improving the local environment, and open land and parks. • Meeting Peoples Need: Eight core policies including housing, and health and well-being. The spatial strategy reinforces Richmond's role as an outer London Borough with a high quality urban and historic environment and open landscape, and as a sport and tourist destination. Areas identified for regeneration include Castlenau, Ham, Hampton Nursery Lands, Heathfield and Mortlake.	All
London Borough of Kingston Upon Thames Core Strategy (2012)	It sets a clear vision, closely aligned with the Kingston Plan (2008-2020) (the Borough's Sustainable Community Strategy), as to how the Borough should look and function and how development needs will be met up to 2027. To ensure that the Core Strategy contributes to achieving the Kingston Plan objectives, the Core Strategy objectives and policies are aligned with the three themes. The Kingston Plan Vision: *'To be a place where people are happy, healthy and enjoy a*	All

	good quality of life, in a safe and tolerant environment, where business is prosperous, and where everyone in the community can contribute to Kingston's success and reach their own full potential.' Themes: • A Sustainable Kingston: protecting and enhancing the environment for us and for future generations. • Prosperous and Inclusive: sharing prosperity and opportunity. • Safe, Healthy and Strong: preventing problems and promoting responsibility and independence. Key Areas of Change have been identified as Kingston Town Centre, Tolworth Regeneration Area and Hogsmill Valley.	
London Borough of Wandsworth Core Strategy (2010)	The Core Strategy aims to make provision to meet needs for housing, business, community services and infrastructure, in a sustainable way, protecting and improving both the built and the natural environments while mitigating climate change To achieve this vision the Council has set strategic objectives in three key areas and options in the Core Strategy have been tested against these objectives. Sustainable development is the overriding principle. • Environmental Objectives such as protecting and enhancing open spaces and the natural environment, and managing the consequences and reducing the risk of flooding. • Social Objectives such as creating safer, healthier and more secure communities. • Economic Objectives such as securing regeneration in areas of deprivation to reduce poverty and social exclusion. Regeneration areas have been identified as the Thames Riverside, the town centres and the Vauxhall/Nine Elms/Battersea Opportunity Area.	All
Croydon's Open Space Strategy (2005-10)	Provide clear objectives and a framework by which Councils can effectively manage,	Biodiversity and Material Assets

Kingston Upon Thames Green Space Strategy (2008-18)	maintain and enhance the Open Space network of each Borough. help focus resources efficiently and effectively on land that is owned or managed by the Council on behalf of others. There will always be a demand for open space. The challenge is to make its availability and management relevant to people's needs. This strategy provides a framework for the maintenance and enhancement of the Green Spaces thus seeking to meet people's needs and expectations of the Borough's Green Spaces	
Merton's Open Space Strategy (2010/11)		
Richmond's Parks and Open Spaces Strategy		
Sutton's Open Space Strategy (2007)		
Wandsworth's Parks Strategy		
London Borough of Croydon Surface Water Management Plan (2011)	Delivered as part of the Drain London Project. Individual plans for each Borough which outlines the preferred surface water management strategy for each Borough and includes consideration of flooding from sewers, drains, groundwater and runoff from land, small watercourses and ditches that occurs as a result of heavy rainfall.	All
London Borough of Kingston Upon Thames Surface Water Management Plan (2011)		
London Borough of Merton Surface Water Management Plan (2011)		
London Borough of Richmond Upon Thames Surface Water Management Plan (2011)		
London Borough of Sutton Surface Water Management Plan (2011)		
London Borough of Wandsworth Surface Water Management Plan (2011)		
London Borough of Croydon Level 1 & 2 Strategic Flood Risk Assessment (2008 & 2009)	A Level 1 SFRA provides an overview of the flood risk issues within each Borough to enable application of the Sequential Test by the individual Boroughs. Flooding from different sources including river flooding, tidal flooding, sewer, groundwater and surface	All

London Borough of Kingston Upon Thames Level 1 Strategic Flood Risk Assessment 2008)	water flooding are all assessed within the SFRA. A Level 2 SFRA provides supplementary information to the Level 1 SFRAs, to inform on flood risks associated with allocation sites that may require the Exception Test as identified in the respective Sequential Test. Level 2 mapping compliments that produced in the Level 1 SFRAs, to provide a complete suite of flood mapping from all sources, based on available data. The Level 1 and 2 reports should be used in conjunction with each other for both forward strategic planning and to inform ongoing development control decisions.	
London Borough of Merton Level 1 & 2 Strategic Flood Risk Assessment (2008 & 2009)		
London Borough of Richmond Upon Thames Strategic Flood Risk Assessment (2008)		
London Borough of Sutton Level 2 Strategic Flood Risk Assessment (2009)		
London Borough of Wandsworth Level 1 & 2 Strategic Flood Risk Assessment (2008 & 2009)		
London Borough of Croydon Preliminary Flood Risk Assessment (2011)	Provides a high level summary of significant flood risk within each Borough describing both the probability and harmful consequences of past and future flooding. The scope of a PFRA is to consider flooding from the following sources; surface runoff, groundwater, sewers and ordinary watercourses and any interaction these have with main rivers and the sea.	All
London Borough of Kingston Upon Thames Preliminary Flood Risk Assessment (2011)		
London Borough of Merton Preliminary Flood Risk Assessment (2011)		
London Borough of Richmond Upon Thames Preliminary Flood Risk Assessment (2011)		
London Borough of Sutton Preliminary Flood Risk Assessment (2011)		
London Borough of Wandsworth		

Preliminary Flood Risk Assessment (2011)		
London Borough of Croydon Joint Strategic Needs Assessment (2012/13)	A systematic method of reviewing the health and well-being of a population, leading to agreed commissioning priorities that will improve health and wellbeing outcomes and reduce inequalities	All
London Borough of Kingston Upon Thames Joint Strategic Needs Assessment (2010-11)		
London Borough of Merton Joint Strategic Needs Assessment (2013)		
London Borough of Richmond Upon Thames Joint Strategic Needs Assessment (2010-12)		
London Borough of Sutton Joint Strategic Needs Assessment (2013)		
London Borough of Wandsworth Joint Strategic Needs Assessment (2010)		
Health Profiles (2013) for the London Boroughs of Croydon, Kingston Upon Thames, Merton, Richmond Upon Thames, Sutton and Wandsworth	Gives a picture of health within a particular administrative area. It is designed to help local government and health service understand community's needs, and ways that they can work to improve people's health and reduce health inequalities.	Human Health