Royal Borough of Greenwich Local Flood Risk Management Strategy

Strategic Environmental Assessment

Environmental Report
November 2014

Royal Borough of Greenwich
The Eltham Centre
2 Archery Road
London
SE9 1HA

JBA Project Manager

Jack Southon
JBA Consulting
Aberdeen House
South Road
Haywards Heath
West Sussex
RH16 4NG

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Contract

This report describes work commissioned by the Royal Borough of Greenwich. Rachel Drabble and David Revill of JBA Consulting carried out this work.

Prepared by ..... Rachel Drabble BSc (Hons)
Environmental Consultant

Prepared by ..... David Revill BSc MSc CEnv MIES
Principal Environmental Consultant

Purpose

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Non-Technical Summary

The Royal Borough of Greenwich is currently preparing a Local Flood Risk Management Strategy (The Strategy). As part of this process, the Council is also carrying out a Strategic Environmental Assessment (SEA), which considers the potential environmental effects of the Strategy. This Environmental Report sets out findings of the SEA. It has been produced to meet the requirements of *The Environmental Assessment of Plans and Programmes Regulations 2004* (hereafter referred to as the 'SEA Regulations') and follows the guidance contained within *A Practical Guide to the Strategic Environmental Assessment Directive* (ODPM, 2005).

The full range of environmental receptors has been considered through the SEA. This meets the requirements of the SEA Directive, which requires that an assessment identifies the potentially significant environmental impacts on *'biodiversity, population, human health, fauna, flora, soil, water, air, climatic, material assets including architectural and archaeological heritage, landscape and the interrelationship between the above factors'.*

The SEA Scoping Report for the Strategy was issued to the statutory consultation bodies in July 2014. A number of comments were received on the scope of the assessment and assessment framework, which were incorporated into the preparation of this Environmental Report.

Assessment of the SEA objectives against three management options ('do nothing', 'maintain current flood risk management regime' and 'manage and reduce local flood risk') was undertaken. This identified the potential effects on the environment associated with these different management actions. The 'do nothing' option is likely to result in a number of significant adverse effects, particularly in relation to people and property, and other environmental assets including historic sites and biodiversity, where increased flooding may create new pathways for the spread of invasive non-native species. Surface water and groundwater quality could also be adversely affected, with increased flooding of contaminated sites leading to greater impacts on water resources. Conversely, increased flood risk may result in greater connectivity between watercourses and their floodplains, offering opportunities for habitat creation to benefit a range of protected and notable species.

The option to 'maintain current flood risk management regime' is likely to result in little or no change in the environmental baseline in the short to medium term as the existing flood risk management regime continues to maintain existing levels of flood protection. However, in the future, as a result of climate change, flood risk will increase, resulting in many of the impacts identified under 'do nothing', although potentially to a lesser extent and significance.

The option to 'manage and reduce local flood risk' has the potential to provide a range of environmental benefits. Flood risk management initiatives, if designed and implemented in an appropriate manner, could provide multiple benefits. This could include reducing flood risk to people and property, contributing to the protection of heritage assets, improvements in water quality, providing new opportunities for habitat creation and the provision of new recreation and amenity assets. Conversely, flood risk management measures, if implemented in an inappropriate manner, could result in adverse effects on a range of environmental features. However, this risk is managed through the preparation of this SEA and through the planning and consenting process, which is likely to require consideration of the sustainability of a project prior to its implementation.

Therefore, it is evident that by doing nothing or maintaining current levels of management, there are likely to be detrimental effects on the SEA objectives, which may be prevented by carrying out active flood risk management as proposed by the Strategy.

Assessment of the Strategy objectives and underpinning measures against the SEA objectives has been undertaken. No negative environmental effects have been identified, although a range of unknown effects have been highlighted. Many of the proposed Strategy objectives have the potential for both direct and indirect environmental benefits. Strategy objective L2 in particular has potential to provide a positive contribution to all of the SEA objectives and make a significant positive contribution to many of them, as they seek to encourage design and development that not only reduces flood risk but also seeks to improve environmental quality. In particular, the Strategy could achieve a range of biodiversity benefits, including new habitat creation, enhancement of existing habitats and greater habitat connectivity. Assessment of Strategy objective N2 against the SEA objectives has highlighted a risk in avoiding inappropriate

development in areas of flood and coastal risk, which could lead to increased development pressure on Green Belt land. This risk is likely to be mitigated due to existing planning laws and protection of Green Belt land.

In addition, as expected of a strategy for managing flood risk, the majority of objectives within the strategy will contribute to achievement of the SEA objectives that seek to reduce flood risk to people, property and infrastructure. As a result, the Strategy is likely to have a significant positive effect on reducing flood risk to local communities.

Some of the Strategy objectives, in particular N1 and N2, are also likely to assist with climate change adaptation. In particular, measures that reduce flood risk, promote better use of water resources, seek to deliver new habitat creation and better connection between existing habitats (such as de-culverting), could make a significant positive contribution to achievement of SEA objective 11.

A detailed assessment of the potential cumulative effects of the Strategy measures should be undertaken when further details regarding specific project level measures and their implementation are known.

The SEA Regulations require Royal Borough of Greenwich to monitor the significant environmental effects (positive and negative) upon the implementation of the Strategy. Key potential environmental effects that require monitoring have been identified together with the monitoring indicators that can be applied to track whether such effects occur.

This Environmental Report will be subject to public consultation for 12 weeks alongside the draft London Borough of Lewisham Council Strategy. All consultation responses received will be reviewed and taken into consideration for the next stage of appraisal process. This will involve the preparation of a Statement of Environmental Particulars (SoEP), which will set out how the findings of the Environmental Report and the views expressed during the consultation period have been taken into account as the Strategy has been finalised and formally approved. The SoEP will also set out any additional monitoring requirements needed to track the significant environmental effects of the strategy.

Contents

List of figures

List of tables

Abbreviations

AHAP ..... Area of High Archaeological Potential
ALC ..... Agricultural Land Classification
AQMA ..... Air Quality Management Area
AQO ..... Air Quality Objectives
CAMS..... Catchment Abstraction Management Strategy
FRM ..... Flood Risk Management
HAP..... Habitat Action Plan
HMWB..... Heavily Modified Water Body
IDB ..... Internal Drainage Board
JBA ..... Jeremy Benn Associates
LBAP ..... Local Biodiversity Action Plan
LCA ..... Landscape Character Area
The Strategy ..... Local Flood Risk Management Strategy
LGA..... Local Government Association
LLFA ..... Lead Local Flood Authority
LNR..... Local Nature Reserve
MOL ..... Metropolitan Open Land
ODPM ..... Office of the Deputy Prime Minister
RBMP..... River Basin Management Plan
SA ..... Sustainability Appraisal
SAB..... SuDS Approval Body
SAC..... Special Area of Conservation
SAP..... Species Action Plan
SCA..... Special Character Area
SEA..... Strategic Environmental Assessment
SoEP..... Statement of Environmental Particulars
SPA..... Special Protection Area
SSSI..... Site of Special Scientific Interest
SuDS..... Sustainable Drainage Systems
WFD..... Water Framework Directive

1 Introduction

1.1 Background

The Royal Borough of Greenwich is currently preparing a Local Flood Risk Management Strategy (The Strategy). As part of this process, the Council is also carrying out a Strategic Environmental Assessment (SEA), which considers the potential environmental effects of the Strategy. This Environmental Report sets out findings of the SEA. It has been produced to meet the requirements of *The Environmental Assessment of Plans and Programmes Regulations 2004* (hereafter referred to as the 'SEA Regulations') and follows the guidance contained within *A Practical Guide to the Strategic Environmental Assessment Directive* (ODPM, 2005).

The ODPM guidance sets out a five stage process (A to E) to be followed (see Table 1-1). This report addresses stages B and C of the SEA process wherein Strategy options and alternatives are identified and the predicted environmental effects of the Strategy are assessed.

Consultation (Stage D) on this Environmental Report will be conducted as outlined in Section 7.1 of this document, whilst monitoring of the significant effects of the Strategy (Stage E) will be undertaken in accordance with the outline monitoring programme included in Section 6.3.

Table 1-1: Stages in the SEA process

SEA Stage	Purpose
Stage A	Setting the context and objectives, establishing the baseline and deciding on the scope
Stage B	Developing and refining alternatives and assessing effects
Stage C	Preparing the Environmental Report
Stage D	Consulting on the draft plan or programme and the Environmental Report
Stage E	Monitoring the significant effects of implementing the plan or programme on the environment.

1.2 Strategic Environmental Assessment (SEA)

SEA is a statutory assessment process required under the *Environmental Assessment of Plans and Programmes Regulations 2004* (the 'SEA Regulations'). These regulations transpose into UK law the requirements of the European Directive 2001/42/EC *on the assessment of the effects of certain plans and programmes on the environment* (the 'SEA Directive')[1]. The SEA Directive requires formal assessment of plans and programmes which are likely to have significant effects (either positive or negative) on the environment. It applies to all plans and programmes which are *'subject to preparation and/or adoption by an authority at national, regional or local level'* or are *'required by legislative, regulatory or administrative provisions'*[2].

Local Government Association (LGA) guidance[3] on the production of the Strategy identifies the likely requirement for an SEA, stating that *'the Local* [Flood Risk Management] *FRM Strategy is likely to require statutory SEA, but this requirement is something the* [Lead Local Flood Authority] *LLFA must consider'*. A SEA screening process was therefore undertaken and the Council has confirmed the requirement for its Strategy to undergo SEA.

SEA involves the systematic identification and evaluation of the potential environmental impacts of the Strategy. This information is then used to aid the selection of a preferred option(s) for the strategy, which are those that best meet its economic, environmental and social objectives, and legal requirements.

The full range of environmental receptors has been considered through the SEA. This meets the requirements of the SEA Directive, which requires that an assessment identifies the potentially significant environmental impacts on *'biodiversity, population, human health, fauna, flora, soil, water,*

[1] Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment

[2] Office of the Deputy Prime Minister (2004), Environmental Assessment of Plans and Programmes Regulations 2004 (No. 1633)

[3] Local Government Association (2011), Framework to Assist the Development of the Local Strategy for Flood Risk Management.

air, climatic, material assets including architectural and archaeological heritage, landscape and the interrelationship between the above factors'[1].

Annex I of the SEA Directive sets out the scope of information to be provided by the SEA. This is described in Table 1-2 below, which also identifies where in the SEA process for the Strategy that the relevant requirement will be met.

Table 1-2: Stages in the SEA process as identified within Annex I of the SEA Directive

SEA Directive requirements	Where covered in the SEA
(a) an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;	Section 1.3
(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	Section 2
(c) the environmental characteristics of areas likely to be significantly affected;	Section 2
(d) any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;	Section 2
(e) the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;	Section 2
(f) the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;	Sections 4 and 5
(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	Section 5
(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;	Section 4
(i) a description of the measures envisaged concerning monitoring in accordance with Article 10;	Section 6.3
(j) a non-technical summary of the information provided under the above headings.	Executive summary

The first output from the SEA process is the production of a Scoping Report[4], which outlines the scope and methodology of the assessment. A proportionate approach was adopted towards establishing the scope of the SEA, reflecting the high-level nature of the Strategy. Consultation with the statutory consultees (English Heritage, Natural England and the Environment Agency) was undertaken in January 2014 to confirm the baseline environment of the study area and the assessment framework (see Section 1.5 for further information).

This Environmental Report has now been prepared to set out the likely significant effects on the environment of implementing the Strategy.

1.3 The Local Flood Risk Management Strategy (The Strategy)

The Flood and Water Management Act (FWMA) was passed in April 2010. It aims to improve both flood risk management and the way we manage our water resources. The FWMA creates clearer roles and responsibilities and instils a more risk-based approach to flood risk management. This includes a new lead role for the Council as a Lead Local Flood Authority (LLFA) in managing and leading on local flood risk management from surface water, groundwater and ordinary watercourses.

Under the requirements of the FWMA, the Council must develop, maintain, apply and monitor a Strategy for local flood risk management in its area. The Strategy provides a delivery vehicle for improved flood risk management and supports the development of partnership funding and a strategic investment programme.

[4] JBA Consulting (2013), Greenwich Borough Council Local Flood Risk Management Strategy. Strategic Environmental Assessment (SEA) Scoping Report (October 2013)

The Strategy will set out:

- The roles and responsibilities for each Risk Management Authority (RMA) and their flood risk management functions; and
- Opportunities, objectives and measures for flood risk reduction of existing communities, including ways to minimise the risk from future growth.

Development of the Strategy provides considerable opportunities to improve and integrate land use planning and flood risk management. It is an important tool to protect vulnerable communities and deliver sustainable regeneration and growth.

1.4 The study area

The Royal Borough of Greenwich is located in south-east London (see **Error! Reference source not found.**) and takes its name from the historic town of Greenwich. It is bounded to the north by the River Thames, with the London Borough of Bexley to the east, and the boroughs of Lewisham and Bromley to the west and south respectively. The Borough is highly urban and includes the areas of Greenwich, Eltham and Woolwich. It covers an area of approximately 50km^2 and has a population of approximately 255,000 people.

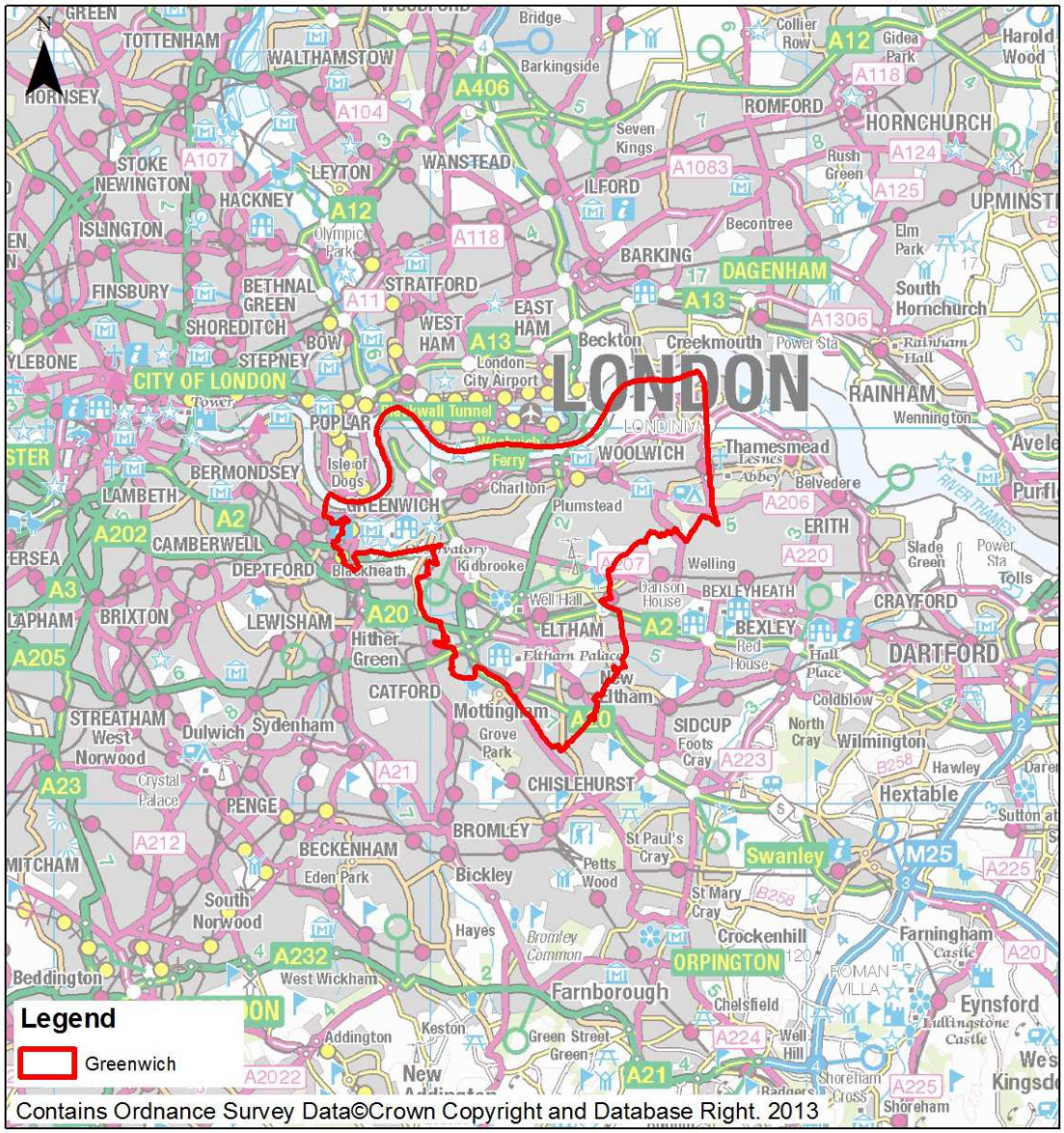

Figure 1-1: Study area

1.5 SEA scoping

The SEA Scoping Report for the Strategy was issued to the statutory consultation bodies in July 2014. A number of comments were received on the scope of the assessment and assessment framework. Table 1-3 below summarises the comments received and how they have been addressed within this Environmental Report.

Table 1-3: SEA scoping consultation responses

Consultee	Comment received	Action taken
Natural England letter dated 12 August 2014	The London Plan 2013 is referenced, the Council may wish to consider the Further Alterations to the London Plan (FALP).	FALP has been reviewed and included in Section **Error! Reference source not found.** and Appendix B.
	The approach and methodology used for the Habitat Regulations Assessment and TLSE is in line with legislation and advice that would be offered by Natural England and therefore Natural England agrees with the conclusion that no likely significant effect is identified and that there is no need to undertake an Appropriate Assessment.	Comment noted, no action required.
	SEA objectives and indicators covers the issues and topics that Natural England would wish to see in such a document and the 11 objectives can be broadly supported, especially objectives 2, 3 and 4. The indicators proposed are also acceptable to Natural England.	Comments noted, no action required.
Environment Agency letter dated 5 September 2014	The most important issues for the Environment Agency which include flood risk and sustainable drainage, biodiversity, land contamination, water quality, groundwater protection and pollution prevention have been addressed.	Comments noted, no action required.
	The SEA scoping report appears consistent with the National Flood Risk & Coastal Erosion Management Strategy (NFCERMS), produced by the Environment Agency.	Comments noted, no action required.
	Appendix A references the Ravensbourne River Corridor Improvement Plan. This document only applies to London Borough of Lewisham. It also appears to miss off their strategic flood risk assessment.	Comments noted, reference to the Ravensbourne River Corridor Improvement Plan. Greenwich's Strategy Flood Risk Assessment has been reviewed and included in Appendix B.
English Heritage letter dated 10 September 2014	Agree that an SEA is needed for the Strategy. No further comments on the screening reports.	Comments noted.
	By identifying the significance, the threats and opportunities that may apply, the SEA process will assist in identifying the best possible approach for the Strategy in line with the concept of sustainable development.	Comments noted, historic assets are considered in the SEA.
	English Heritage advises that conservation officers (and archaeological experts where available and appropriate) are involved throughout the preparation, assessment and implementation of the Strategy.	Comments noted.
	The reference to the *Heritage Protection White Paper 2007* is now no longer needed as various new approaches and measures have since been introduced. There are documents supporting the NPPF which are currently being revised but comprise the still extant PPS5 *Practice Guide* and the draft English Heritage *Good Practice Advice Guides.*	Comments noted and the reference has been taken out. The PPS5 *Practice Guide* and the draft English Heritage *Good Practice Advice Guides* have been reviewed and included in Section **Error! Reference source not found.** and Appendix B.

Consultee	Comment received	Action taken
	Where a World Heritage Site or other major heritage asset has a management plan, this may also contain useful information and could be identified in Table 4.	Comments noted, local plans have been reviewed as applicable. *London's World Heritage Sites – Guidance on Settings* has been reviewed and included in Table 2-1 and Appendix B.
	Objective 7 is acceptable and we note can cover a range of considerations. Reference to 'heritage assets' rather than 'heritage sites' would be preferable, as the former term has a specific meaning in the NPPF.	Objective 7 has been updated to read 'heritage assets' rather than 'heritage sites'.
	It can be beneficial for the SEA framework to include relevant sub-objectives (decision making criteria) to help ensure heritage issues are considered. The indicator for the historic environment is acceptable, although we recommend that this should refer to 'heritage assets' rather than 'historic sites'. Additional indicators would be helpful, for instance: • The proportion of conservation area at risk of flooding. • The number of designated and non-designated heritage assets harmed by flood risk management measures, including impacts on their settings. • The number of flood risk management measures implemented that conserve and enhance heritage assets.	Comments noted, the wording has been updated to 'assets'. The additional indicators have been reviewed and the following has been included: • The proportion of conservation area at risk of flooding. • The number of designated and non-designated heritage assets harmed by flood risk management measures, including impacts on their settings. • The number of flood risk management measures implemented that conserve and enhance heritage assets. The other indicators have not been included as they are on a small scale rather than on a strategic scale.
	It is important that the Borough's local conservation staff are engaged throughout the SEA process to ensure that the environmental information is augmented as necessary.	Borough's local conservation staff are engaged throughout the SEA process.
	Landscape and Visual amenity It would be appropriate to identify the three historic landscapes referred to on p10 as registered historic parks and gardens. It is helpful to include a clear reference to the status of these landscapes here to understand their vulnerability in a wider landscape context.	The Registered Historic Parks and Gardens have been identified in Section 2.4.
	Historic Environment We suggest some minor changes: • We welcome the incorporation of information from the Heritage at Risk Register. There is a need to identify if this refers to the Borough's own register, or that published by English Heritage. In the case of the English Heritage register, this is an annual publication, and so we would recommend that you refer to the most up-to-date report which is 2013. The next report is published in October. If possible, where the 'heritage at risk' status is clearly associated with flood risk, this should be identified. • The reference to non-designated heritage assets has great relevance to non-scheduled archaeology. We welcome the information included here reflecting the recent work to define Areas of High Archaeological Potential (AHAPs), and	Comments noted: • Registered Parks and Gardens are identified by name. • Heritage at Risk Register information has been updated to 2014. No assets are at risk from flooding.

Consultee	Comment received	Action taken
	the definition of these on the map.	
	The section on key environmental issues identifies important general issues. We suggest that the third sentence is amended to '…could also have adverse effects, including indirect impacts on the setting of heritage assets.' If specific information is available from Conservation Area Appraisals or Management Plans for major heritage assets, such information could be added here. The final sentence relating to AHAPs needs a slight revision, we suggest the wording: '…preliminary archaeological site investigations to assess the archaeological potential, and plan to avoid or mitigate the impact of a proposed development…'	Comments noted. Sentence updated. Specific information was unable to be obtained.
	SEA scoping summary table – the content for the historic environment is generally appropriate. We suggest that there should be reference to opportunities to protect and enhance all heritage assets, including major sites.	Comments noted, table updated.

1.6 Habitats Regulations Assessment

The European Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC, 'the Habitats Directive') as implemented through the Conservation of Habitats and Species Regulation 2010 (as amended) ('the Habitats Regulations') requires a competent authority to carry out a Habitats Regulations Assessment (HRA) of a plan or project to establish whether it will have a 'likely significant effect' on sites designated for their nature conservation interest at an international level (known as European sites, which include SACs, SPAs, and by UK Government policy, Ramsar sites). The Strategy for the Royal Borough of Greenwich, as a statutory plan, is subject to the requirements of the Habitats Directive.

Assessing the impacts of a plan under the Habitats Regulations is a separate process to SEA. However, there is overlap between these two types of assessment. A Test of Likely Significant Effect (TLSE) (screening appraisal) has been undertaken in accordance with the requirements of the Habitats Regulations to determine whether the Strategy is likely to adversely affect the integrity of a European site (alone or in combination). Consultation on the outcome of the screening assessment was undertaken as part of the SEA scoping consultation process.

All European sites lying partially or wholly within 30km of the Borough boundary were included in the assessment in order to address the fact that measures in the Greenwich Strategy may affect European sites which are located outside the administrative boundary of the strategy.

Greenwich does not support any European sites (SACs, SPAs and Ramsar sites). There are 10 European sites within approximately 30km of the Borough boundary. These are:

- Lee Valley SPA
- Lee Valley SPA Ramsar
- Thames Estuary and Marshes SPA
- Thames Estuary and Marshes Ramsar
- South West London Waterbodies SPA
- South West London Waterbodies Ramsar
- Richmond Park SAC
- Wimbledon Common SAC
- Epping Forest SAC
- North Downs Woodlands SAC

The Lee Valley SPA and Ramsar sites are located 9km to the north of the boundary, to the north of the City of London and the River Thames. Epping Forest SAC is also located 9km to the north of the Borough.

None of the European sites is hydrologically linked to Greenwich and the majority are located to the north of the Borough, which is separated from these sites by central London and the River Thames.

The TLSE concluded that it is not likely that any of these designated sites would be adversely impacted by flood risk management activities undertaken in the Borough and as such, no further assessment is required under the Habitats Regulations. Further details of this assessment are provided in the TLSE screening appraisal included in Appendix A of this report and a summary of its outcomes is provided in Section 6.4. Consultation with Natural England on the outcomes of this assessment has been undertaken as part of the consultation process outlined in Section 7.1 and it was agreed that the Borough is of a sufficient distance from these sites that no likely significant effect is identified and an Appropriate Assessment is not required.

2 Environmental baseline

2.1 Introduction

The following section presents the findings of the SEA Scoping Report[4], which identified the context and objectives of the Strategy and identified and the scope of the assessment.

2.2 Other relevant plans, programmes and environmental protection objectives

As part of the SEA process, an assessment of the integration of existing policies, plans and programmes on the proposed Strategy is required. This is to address the requirement within the SEA Directive to determine the *'relationship [of the plan or programme] with other relevant plans and programmes'* (Annex I (a)), including, *'environmental protection objectives, established at international, [European] community or [national] level'* (Annex I I).

Identifying these relationships enables potential synergies to be determined, strengthening the benefits that can be gained from implementation of the Strategy. This information is also used to inform the development of the environmental baseline and the identification of key issues and problems. In addition, any inconsistencies or constraints can be identified, which could hinder the achievement of the environmental protection objectives or those of the Strategy, and therefore providing a broad appraisal of the strategy's compliance with international, national and local considerations.

The ODPM SEA guidance recognises that no list of plans or programmes can be definitive and as a result this report describes only the key documents that may influence the Strategy. These are shown in Table 2-1 and described in more detail in Appendix B.

Table 2-1: Policies, plans and programmes reviewed through this SEA process

Plan, Policy or Programme
International
EU Sustainable Development Strategy (revised 2006)
European Biodiversity Strategy to 2020
EC Birds Directive – Council Directive 2009/147/EEC on the conservation of wild birds
EU Floods Directive – Directive 2007/60/EC on the assessment and management of flood risks
EU Groundwater Directive – Directive 2006/118/EC on the protection of groundwater against pollution and deterioration
EC Habitats Directive – Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora
Urban Wastewater Treatment Directive – Directive 91/271/EEC concerning urban waste water treatment
EU Water Framework Directive – Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy
National
Securing the Future – the UK Government Sustainable Development Strategy (2005)
Flood and Water Management Act (2010)
Flood Risk Regulations (2009)
Water for People and the Environment, Water Resources Strategy for England and Wales (2009)
Future Water, The Government's water strategy for England (2008)
Making Space for Water – taking forward a new Government strategy for flood and coastal erosion risk management in England (2005)
The National Flood and Coastal Erosion Risk Management Strategy for England (2011)
Water Act (2003)
Draft Water Bill (2012)
The National Flood Emergency Framework for England (2011)
The Carbon Plan (2011)
Building a Low Carbon Economy – the UK's Contribution to Tackling Climate Change (2008)
Climate Change Act (2008)
Biodiversity 2020: A Strategy for England's Wildlife and Ecosystems (2011)
England Biodiversity Framework (2008)
UK Biodiversity Action Plan (1994)
National Wetland Vision (2008)
Wildlife and Countryside Act (as amended) (1981)

Plan, Policy or Programme
Natural Environment and Rural Communities (NERC) Act (2006)
Salmon and Freshwater Fisheries Act (1975)
Contaminated Land (England) Regulations (2006)
National Planning Policy Framework (2012)
PPS5: Planning for the Historic Environment Practice Guide (2010)
Historic Environment Good Practice Advice in Planning: Historic Environment Records (2014)
Historic Environment Good Practice Advice Guide in Planning: Note 3: The Setting of Heritage Assets.
Regional
Regional Flood Risk Appraisal for South East England (2008)
Thames Catchment Flood Management Plan (2009)
London Regional Flood Risk Appraisal – Greater London Authority (2009)
City of London Strategic Flood Risk Assessment (2012)
London Plan – Greater London Authority (2013)
Draft Further Alterations to the London Plan (2014)
Thames Estuary 2100 Strategy (2002)
Managing Water Resources & Flood Risk in the South East (2005)
East London Boroughs Strategic Flood Risk Assessment (2009)
London Rivers Action Plan (2009)
Thames River Basin Management Plan (2009)
Cleaning the Air – Mayors Air Quality Strategy (2010)
Draft Climatic Change Adaptation strategy for London (2010)
London's World Heritage Sites – Guidance on settings, supplementary planning guidance (2012)
Local
Preliminary Flood Risk Assessment London Borough of Greenwich (2011)
Ravensbourne River Corridor Improvement Plan (2010)
London Borough of Greenwich Local Plan (2012)
City of London Infrastructure Delivery Plan (2011)
Greenwich Biodiversity Action Plan (2013)
Regeneration Manifesto for Public Space (2009)
London Borough of Greenwich Surface Water Management Plan (2008)

2.3 Environmental characteristics and key issues

A search of baseline environmental information has been undertaken to identify the key environmental characteristics of the Borough. This includes details of the environmental status and condition of notable environmental features; current and future predicted trends in the evolution of the environment; and issues and problems currently affecting the environment.

The information obtained through this desk study exercise is set out in the following topic-specific sections, many of which are inter-linked. The information used to characterise the baseline environment is broadly strategic in nature and reflects the high-level objectives of the Strategy. It has been obtained from a broad range of sources and no new investigations or surveys have been undertaken as part of the scoping process. The baseline may require updating throughout the duration of the SEA process as the Strategy is developed further and new information becomes available.

2.4 Landscape and visual amenity

The London Borough of Greenwich is located to the south east of central London and covers an area of approximately 50km^2. Greenwich is a highly developed urban Borough with 35% of its area consisting of residential neighbourhoods. There are three main commercial centres: Greenwich, Eltham and Woolwich, the latter two designated as major centres for shopping and office employment[5]. The River Thames forms the Borough's northern boundary along a 13km stretch, making it the longest waterfront in London.

[5] Local Implementation Plan http://www.royalgreenwich.gov.uk/downloads/download/289/local_implementation_plan

The topography of Greenwich is broadly flat along the banks of the River Thames. It then rises steeply to the south through Greenwich Park, rising to the southeast of the Borough to its highest point at Shooters Hill at 131m above ordnance datum. This provides a superb vantage point across London and also has London's most ancient woodland believed to be approximately 8,000 years old and of exceptional ecological merit[6].

The Borough has over 14km² of open space made up of parks, ancient woodlands and Thames side paths, which represent almost a quarter of the Borough. These areas provide a positive contribution to the Borough and valuable resource that is also important for the Borough's biodiversity. There are 48 public parks, 12 of which have been awarded the Green Flag Award[7], an award scheme which sets the benchmark for a national standard for parks and green spaces in the UK. Four parks are also designated as Registered Parks and Gardens of Special Historic Interest, these are:

- Greenwich Park – A royal park with origins from the 15th Century and formally laid out in the 1660s.
- Eltham Palace – A medieval moated enclosure around the remains of a royal palace.
- Well Hall Pleasaunce – The grounds of a 16th Century moated manor house. The house was demolished in the 1930s.
- Repository Woods – Definitive landscaping and development was undertaken in 1804.

The Borough has a number of designated and protected landscape features. These include three historic landscapes, three designated views and 13 local views. The local views are all from publically accessible spaces and provide panoramas and views of landmarks that provide a significant contribution to the local built and natural environment. The majority of views are towards the River Thames and London's skyline highlighting the river and London's importance to the character of the Borough. These views include:

- Shooter's Hill to Central London
- Shrewsbury Park towards the Lower Thames
- Castlewood towards S.E. London
- Eaglesfield Recreation Ground towards Bexley and the Lower Thames
- Eltham Park (North) to Central London
- Winns Common to the Lower Thames
- Thames side panorama from the Thames Barrier open space
- St. Mary's Churchyard towards Mast Pond Wharf and beyond
- Docklands panorama from the Wolfe Monument
- King John's Walk to Central London
- Millennium Dome from Central Park
- Wolfe Monument south towards the All Saints Church in Blackheath[8].

[6] Environment and Heritage http://greenwich-consult.limehouse.co.uk/portal/planning/cs/submission_version/core_strategy_with_development_management_policies_submission_version-_with_proposed_modifications?pointId=1372233638153#section-1372233638153

[7] Royal Borough of Greenwich Green Flag Awards http://www.royalgreenwich.gov.uk/info/200073/parks_and_open_spaces/1039/green_flag_awards

[8] Royal Borough of Greenwich Design and Heritage http://greenwich-consult.limehouse.co.uk/portal/planning/cs/submission_version/core_strategy_with_development_management_policies_submission_version-_with_proposed_modifications?pointId=1372233638145#section-1372233638145

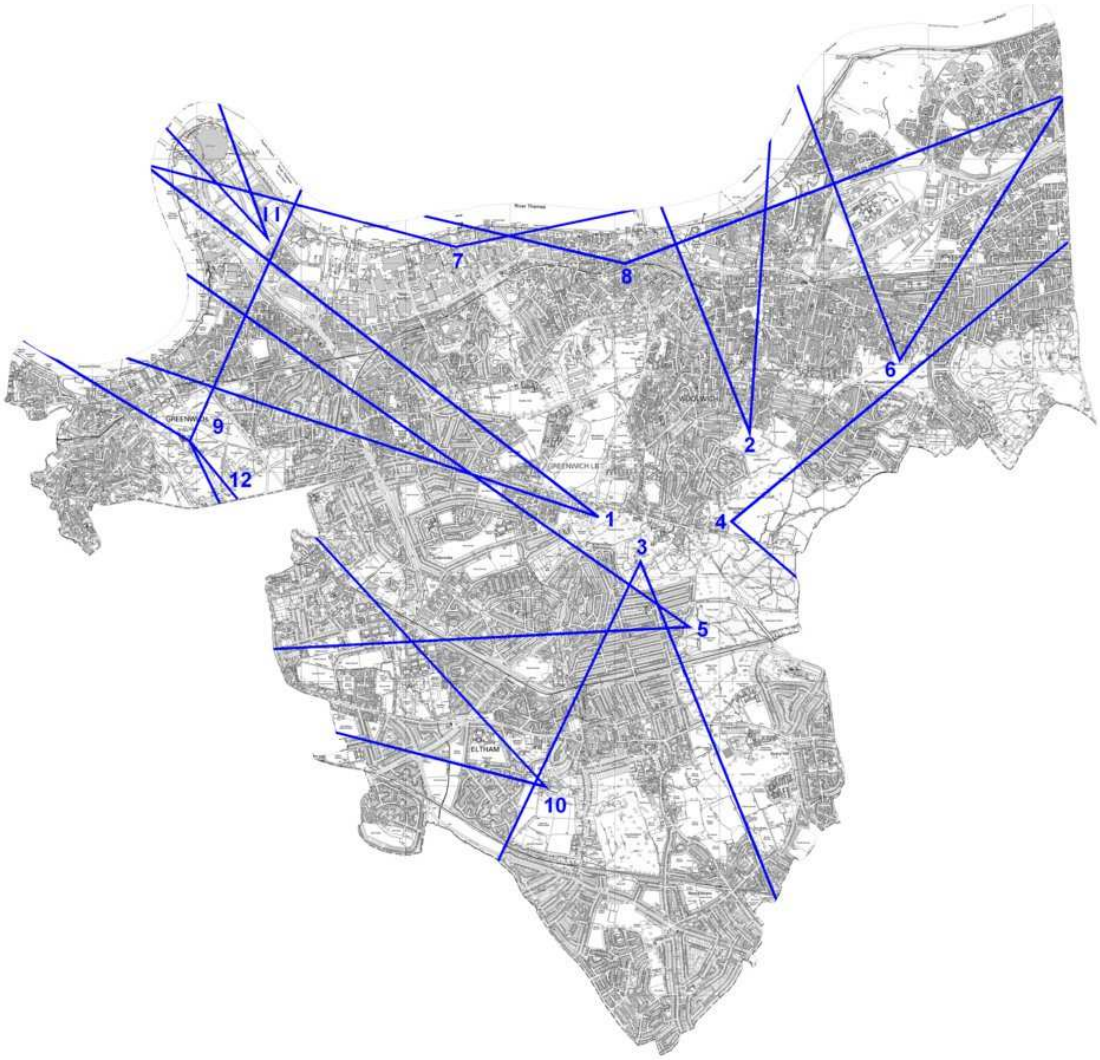

Figure 2-1: Important Local Views in the Borough (source: Royal Borough of Greenwich)

A small area of Greenwich, New Eltham is designated as Green Belt land. This is protected by national and local plans and planning policies, which restrict development including new buildings and large-scale extensions. Metropolitan Open Land (MOL) is land protected in order to preserve its open character, provide breaks in built form and prevent urban sprawl. It is similar to Green Belt land where development proposals must meet stringent landscape requirements and is protected by the London Plan Policy 7.17 (MOL). MOL in the Borough runs through central, eastern and southern parts and includes Bostall Woods, Avery Hill Park and Woolwich Common.

The Borough has a number of green and river corridors which provide important areas of open land and a valuable resource for recreation and amenity, and local wildlife. These corridors include:

- The railway line between Blackheath and Falconwood
- The Plumstead Railway cutting
- The Ridgeway in Abbey Wood/Thamesmead
- The railway line between Lee and New Eltham
- The River Thames, Ravensbourne and Quaggy
- Thamesmead canal network
- Lakes such as Thamesmead Wetlands.

There are four Special Character Areas (SCA) within the Borough: Shooters Hill Golf Course, Eltham Park, Woolwich Common, and Avery Hill. These areas contribute to the Borough and London's unique character and actions have been put in place to safeguard and preserve their character, scale and quality. Skylines and distinct views both to and from these areas are also protected.

The Council has identified a number of areas with open space deficiency (defined as areas that are more than 0.4km from a local park, 1.2km from a district park and 3.2km from a metropolitan park). These deficient areas occur across the Borough and particularly in dense urban areas where development and pressure on land restricts access to local parks. The largest areas appear across the north of the Borough and are shown in **Error! Reference source not found.**.

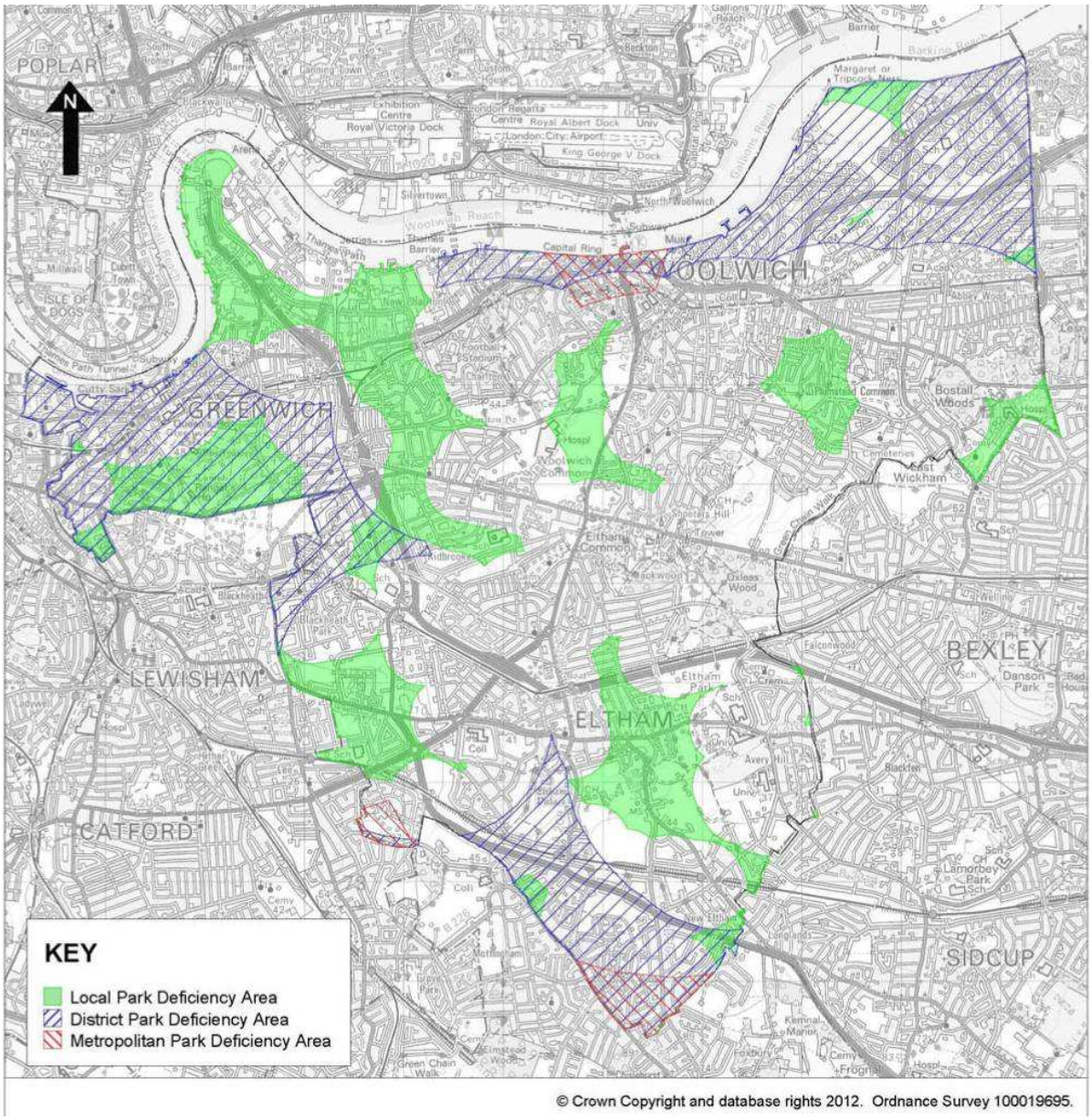

Figure 2-2: Open Space Deficiency Areas (source: Royal Borough of Greenwich)

The Borough has two National Landscape Character Areas (LCAs): Inner London (112) and Greater Thames Estuary (81). The Inner London LCA covers south and central area of the Borough. It has been characterised as predominantly urban, forming both the centre of UK Government and is a major international hub for finance, business, tourism, transport and recreation. A key characteristic of the LCA that is predominant in Greenwich is its network of green space and green space deficiency.

The very north of the Borough includes a narrow strip of land following the River Thames, which is characterised by the Greater Thames Estuary. Key characteristics of this LCA include a predominantly remote and tranquil landscape of shallow creeks, drowned estuaries, low lying islands, mudflats and tidal salt marches. However, such characteristics are not present in the

Greenwich section of this LCA, which is characterised by dense urban and industrial areas, where population density is high and development pressures are increasing[9].

Key environmental issues:

Greenwich is facing pressures from climate change, population growth and development. Although the Borough has a large amount of green space there are areas of public open space deficiency particularly in the northeast of the Borough. Areas of open space need to be protected and enhanced for all residents.

Flood risk management measures have the potential to affect the landscape characteristics of the Borough. This includes changes to the river corridors, impacts on existing open spaces and impacts on the setting of local landmarks and landscape features. Many of these aspects are protected through regional and local policies, and as such could restrict the implementation of the Strategy objectives if they are shown to present a risk to the quality of the landscape.

The risk of flooding in the Borough is at its highest along the River Thames. However this area has also been identified in the London Plan as an Opportunity Area for additional housing. Existing flood defences such as the Thames Barrage provides a high level of protection. However, flood risk will still need to be managed effectively in order for the land to be developed.

2.5 Biodiversity, flora and fauna

A variety of habitat types are present within the Borough and include grasslands, watercourses and other waterbodies, wetlands, woodlands and urban gardens. There are five water bodies that flow through Greenwich: the River Thames, Marsh Dykes and the Rivers Quaggy, Shuttle and Ravensbourne.[10] Wetland habitats in the Borough include ponds, lakes and rivers, and are mostly terrestrial based. The Royal Greenwich Park supports ancient parkland trees and areas of native woodland, ponds and acid grassland. At Sutcliffe Park a recent flood alleviation scheme has restored the River Quaggy to a more naturalistic course and various habitats have been created including damp grassland, reeds and wetlands. The Greenwich Pond Project aims to improve standing water habitats and to enhance the biodiversity in Greenwich Park by rejuvenating the Flower Garden Lake to the southern end of the park. Plans include the provision of a marginal/emergent vegetation zone around the lake to restore ecological function to the Flower Garden Pond and a new wildlife pond within the deer park to create a pond complex in the park[5].

2.5.1 Designated nature conservation sites

Greenwich does not support any internationally or nationally designated sites. However, 10 such sites are located within 30km of the Borough boundary. These are:

- Lee Valley SPA
- Lee Valley Ramsar
- Thames Estuary and Marshes SPA
- Thames Estuary and Marshes Ramsar
- South West London Waterbodies SPA
- South West London Waterbodies Ramsar
- Richmond Park SAC
- Wimbledon Common SAC
- Epping Forest SAC
- North Downs Woodlands SAC

Two internationally designated sites are located within 9km of the Borough boundary. The Lee Valley SPA and Ramsar sites are located 9km to the north of the boundary, to the north of the City of London and the River Thames. These sites are designated for their wetland habitats and support

[9] Natural England – National Character Area Profile 81 Greater Thames Estuary
http://publications.naturalengland.org.uk/publication/4531632073605120?category=587130

[10] London Borough of Lewisham & Environment Agency (2010), Ravensbourne River Corridor Improvement Plan
http://www.lewisham.gov.uk/myservices/planning/policy/Documents/Ravensbourne_River_Corridor_Improvement_Plan_%20Newformat_Feb%202012.pdf .

internationally important numbers of wintering wildfowl. Epping Forest SAC is also located 9km to the north of the Borough.

The Thames Estuary and Marshes SPA and Ramsar sites are located on the south side of the Thames Estuary, 20km to the east of Greenwich. These sites support internationally important numbers of wintering wildfowl. The South West London Waterbodies SPA and Ramsar sites are located 24km west of Greenwich and comprises a series of embanked water supply reservoirs and former gravel pits that support a range of man-made and semi-natural open water habitats. The reservoirs and gravel pits are important feeding and roosting sites for wintering wildfowl. These three SPAs and Ramsar sites are not directly hydrologically linked to the Borough. Richmond Park SAC is located 16km to the west of Greenwich and Wimbledon Common SAC is 13km to the west.

There are two SSSIs within the Borough. Oxleas (Shooter's Hill) Woodlands SSSI is a biological SSSI which encompasses Oxleas, Jack and Shepherdleas Woods. This site is one of the most extensive areas of long established woodland in Greater London and is described as in 'favourable' condition. Gilbert's Pit is a disused chalk, sand and gravel quarry with various geological formations and fossils deposited 55 million years ago[11]. Mayon Wilson and Gilbert's Pit Local Nature Reserve (LNR) partly encompasses Gilbert's Pit geological SSSI.

There are a number of designated non-statutory Sites of Metropolitan Importance (SMI) in the Borough. These include the River Thames and its tidal tributaries. As well as the river channel itself, habitats within the SMI include mudflats, shingle beach, inter-tidal vegetation, islands and the river banks. These habitats are limited within the Borough of Greenwich. Other SMIs with wetland interest are the ponds at Royal Blackheath golf course, Blackheath and Greenwich Park. Royal Blackheath golf course supports a large population of great crested newts[12]. A number of LNRs are located in the Borough. Kidbrooke LNR and the nearby Birdbrook LNR together support the most important assemblage of amphibians (Great crested newts, smooth newts and common toads) in London[13].

A series of wetland areas including Thamesmead Wetlands are located within the Borough. These largely consist of still water and reedswamp. Greenwich Ecology Park is a recently created amenity for environmental education which supports herb-rich grassland, ponds and reedswamp. Crossways Nature Reserve supports small ponds and reedswamp[14]. The floodplain grazing marsh of Marsh Dykes and its associated ditches and dykes support a variety of aquatic invertebrates and water voles and act as important wildlife corridors connecting wildlife habitat such as the River Thames and inland in the Darent and Cray Valleys, which comprise other floodplain habitat14.

The following priority habitats are listed as part of the Greenwich Local Biodiversity Action Plan (LBAP) and each habitat has an independent Habitat Action Plan (HAP):

- Acid grassland and Heathland
- Gardens
- Parks & open spaces
- Wasteland
- Waters edge
- Rivers
- Ponds and Wetlands
- Woodland

The following priority species are listed as part of the Greenwich Local Biodiversity Action Plan (LBAP) and each species has an independent Species Action Plan (SAP)[15]:

- Bats
- Black redstart
- Black poplar
- Hedgehog

[11] Natural England (2013)
[12] Royal Borough of Greenwich Council (2013).
[13] The Kidbrooke Kite (2012). http://www.kidbrookekite.co.uk/
[14] Natural England (2011). London's Natural Signatures: The London Landscape Framework 14. Lower Thames Floodplain.
[15] Royal Greenwich Biodiversity Action Plan (2010) Greenwich Council

- Stag beetle
- Water vole

Water vole is Britain's fastest declining mammal, but London's watercourses remain one of the species' strongholds. Water vole is recognised as a flagship species in the London biodiversity Partnership Rivers HAP[15]. Artificial habitats for water vole have been incorporated into redevelopments such as those at Sutcliffe Park.

Japanese knotweed, Himalayan balsam, giant hogweed and Australian swamp stonecrop have been recorded at a few sites in the Borough, together with isolated occurrences of water fern and floating pennywort. Water primrose has recently been confirmed at Kidbrooke Green nature reserve and is undergoing a programme of removal by the Environment Agency.

Flooding has the potential to cause the spread of these species through the movement of seeds and plant fragments, and flood risk management works in these locations could lead to the spread of these species.

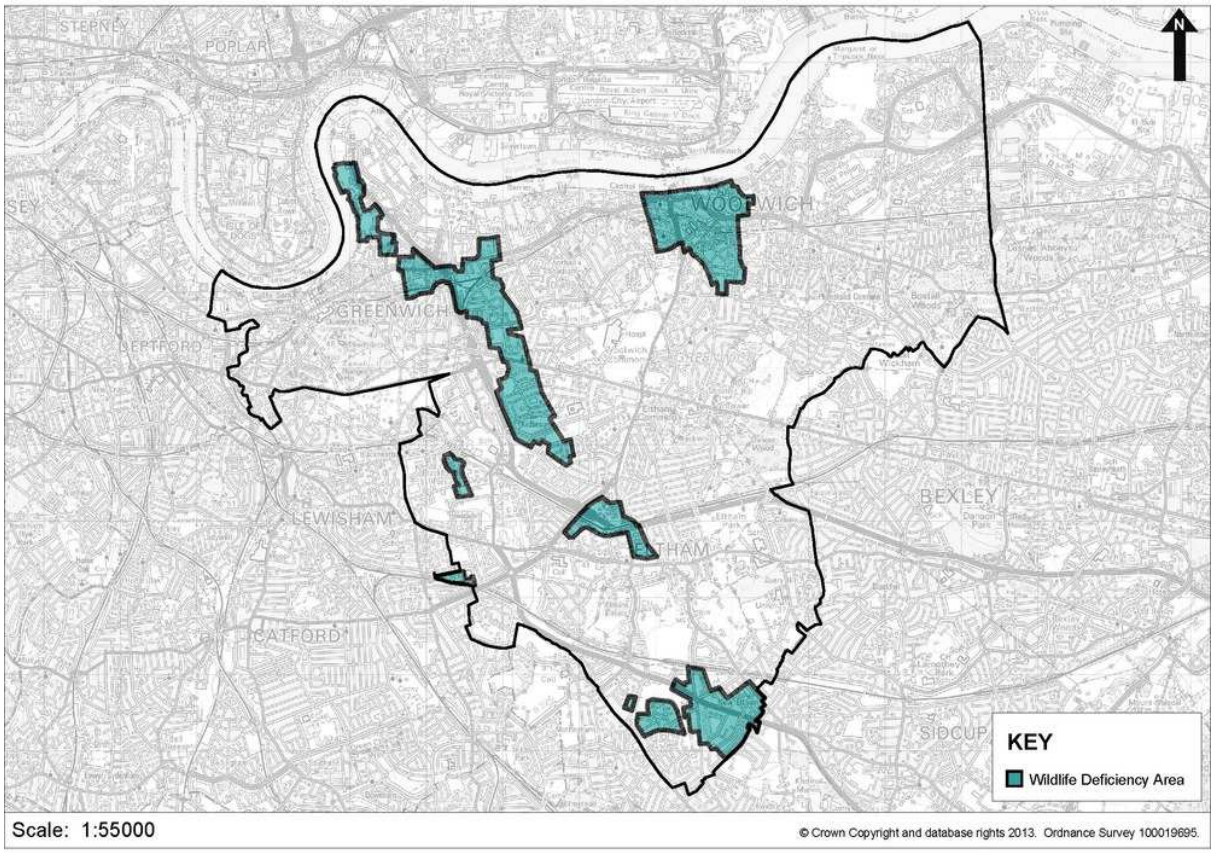

Figure 2-3: Wildlife Deficiency Areas (source: Royal Borough of Greenwich)

2.5.2 Fisheries

The tidal Thames supports a mixture of freshwater, estuarine and marine fish including species such as bream, dace, eel, sea trout, bass, flounder and smelt. The Thamesmead system supports a fishery that is dominated by roach and bream with carp and pike also present in the lakes. A characteristic of the system is the regular seasonal movement of the fish from the lakes to the canals in the winter, with fish returning to the lakes in the summer months[14].

Commercial eel fishermen operate in the tidal Thames in Greenwich. Eel populations in the tidal Thames are currently considered sustainable, and stocks are carefully monitored by the Environment Agency.

Inter-tidal habitat is limited on the tidal Thames through London. New developments such as flood defence works in Deptford Creek have created valuable foraging habitat for fish. Fish populations should also benefit in the long term from the London Tideway Tunnels project which aims to improve the water quality in the Thames.

Local course fisheries in the Borough are located at the Dell and Woolwich Dockyard and Birchmere and Gallions Lake in Thamesmead. These fisheries support carp, roach, bream, silver bream, dace and perch. The fishing lakes and ponds are vulnerable to water quality problems resulting from algal blooms during hot weather leading to fish mortalities.

Improvements to the river channels within the Ravensbourne catchment have locally increased the suitable habitat for fish with the creation of pools and riffles to help maintain oxygen levels and sufficient depth of water during periods of low flow. The Ravensbourne has been restocked with chub and dace by the Environmental Agency. Populations of species such as trout generally remain isolated due to the fragmented sections of the river and limited areas of suitable spawning gravels[9].

Key environmental issues:

A number of nature designated sites and other sites, such as Greenwich Park, Kidbrooke LNR and Marsh Dykes support ponds and wetland habitats and act as wildlife corridors linking wetland habitat within areas of the Borough. These habitats are largely dependent upon the underlying hydrological conditions and are therefore vulnerable to flooding and changes in underlying soils, hydrology and habitat. The Borough also supports a number of species, particularly amphibians which are reliant on aquatic and riparian habitats and subsequently are at risk from flooding events, poor water quality and habitat changes.

Future incidences of flooding could potentially damage and change the nature of habitats and supporting species composition within the nature designated sites within and outside the Borough. The Strategy will need to consider whether any flood risk management measures will lead to adverse impacts on the water bodies within the Borough and whether the Strategy can help contribute to delivering any mitigation measures such as through improvement to fish passage.

2.6 Water environment

2.6.1 Water resources

There are five watercourses that flow through Greenwich: Marsh Dykes, the River Quaggy (known as Kyd Brook in its upper reaches), the River Shuttle and the River Ravensbourne that extends across the boundaries of the Borough and joins the River Thames at Deptford Creek. The River Ravensbourne rises in the Borough of Bromley and flows northwards to Greenwich before its confluence with the River Thames at Deptford Creek. The Quaggy rises in Bromley and flows through Greenwich before joining the Ravensbourne in Greenwich. The River Shuttle is a small tributary of the River Cray. The Shuttle rises at two or more springs in Greenwich at the junction of the permeable Blackheath Beds and the denser Woolwich Beds. It then flows through the London Borough of Bexley before joining the River Cray. Marsh Dykes is a network of ditches that extends into the London Borough of Bexley. Numerous other small streams and surface water outfalls join the main river between its source and confluence.

Greenwich lies wholly within the Thames Water region, which supplies around 2,600 million litres of tap water to 9 million customers across London and the Thames Valley. The River Thames is the primary source of public water supply in London. Two-thirds is taken from the freshwater Thames with an additional 22% taken from the River Lee. The remainder is taken from groundwater. The Borough falls within the 'London Water Resource Zone', which has been designated as an area that is 'seriously water stressed[16] and also falls into the London Catchment Abstraction Management Strategy (CAMS) area. This area has been assessed as having 'no water available' and currently services a number of important abstractions, mostly for public water supply, but also for spray irrigation and agriculture. Average consumption in Greenwich in 2011/12 was 165 litres per person per day (pp/pd), which is in line with the London average of 163l pp/pd, but higher than the UK average of around 145l pp/pd[9]. Household water usage has remained relatively constant over the past decade.

The River Quaggy (together with its tributary Kyd Brook) is the major surface water resource for abstraction in Greenwich. However, the availability of water from this source is restricted. The major chalk aquifer that underlies much of London is the major groundwater resource for abstraction[17]. The chalk aquifer is assessed as over-licensed and is managed to avoid groundwater flooding of London's deep infrastructure. There are 16 licensed abstractions in the Borough, which are mainly

[16] Areas of Water Stress: Final classification. Ref Code GEH01207BNOC. Environment Agency.
[17] Greenwich London Borough Environmental Factsheet (2013). Environment Agency

for industrial use but also for public water supply and minerals. Twelve of these abstractions are taken from the chalk aquifer.[18]

Pressure on water resources will continue to increase in the future and corresponding annual flows in River Thames by the 2050's could be over 10% lower when compared to today's values[9]. These issues are linked to increasing population growth in the Borough and in Greater London, and the impacts of climate change, which could lead to hotter and drier conditions and more erratic rainfall events.

2.6.2 Water Framework Directive

The Royal Borough of Greenwich is covered by the Thames River Basin Management Plan (RBMP), which identifies the current quality of water bodies in the Borough and sets objectives for making further improvements to their ecological and chemical quality. The River Thames, Ravensbourne, Quaggy and Shuttle are classified as Heavily Modified Water Bodies (HMWB) and as priority water bodies for improvement action under the Water Framework Directive (WFD).

Surface water bodies in Greenwich are classified as Moderate or Poor under the WFD and are generally improving across the Borough with the exception of the Ravensbourne (Catford to Deptford section), which declined from Poor to Bad between 2009 and 2012, due to pollution and misconnected drains. The biological status is Poor. In terms of macro-invertebrates, the rivers are classified as Moderate of Poor and are also Poor for fish. Physio-chemical status is described as Moderate, although not all waterbodies have been assessed[14].

2.6.3 Surface water quality

Water pollution does not tend to be a major issue in Greenwich. One major (Category 1) pollution incident was recorded in 2007, which was due to authorised activity at a pumping station from overloading during a storm resulting in a discharge of sewage and urban run-off. Between 2005 and 2012, five significant (Category 2) and 59 minor (Category 3) water pollution incidents were recorded. The causes were control and containment failures, natural causes and authorised and unauthorised activities. There is no Sewage Treatment Works (STW) in Greenwich, which is served by Crossness STW in south-east London.

Pressures on water quality and factors preventing waterbodies reaching Good status generally arise from the urban nature of catchment. A number of pressures and risks have been identified for Greenwich which are contributing to preventing waterbodies reaching Good status and can adversely affect river ecology and water quality, these include:

- Invasive non-native species
- Misconnected domestic drains
- Pollution
- Physical or morphological alterations.

2.6.4 Groundwater quality

Groundwater provides vital resources for public water supply and industry. Impacts on groundwater are broadly related to land use. A number of pressures and risks have been identified for the Borough and include:

- Abstraction and flow regulation
- Misconnected domestic drains
- Diffuse pollution sources – road run-off, pollutants from domestic and agricultural sources
- Inputs of nitrates, pesticides, solvents and hydrocarbons.

Greenwich lies within a Groundwater Vulnerability Zone for a major aquifer and is classed as High or Intermediate. It also lies within a Drinking Water Protected Area with the drinking water status is classed as at risk[9].

[18] Environment Agency (2011) Royal Borough of Greenwich Environmental fact sheet

2.6.5 Flooding

The area of land within flood zones 2 and 3 is predominantly in the north of the Borough, where the risk is from the tidal River Thames. Other areas include the land around the River Quaggy in the south west of the Borough.

Approximately 27,000 properties are in areas at risk of flooding from river and tidal sources in Greenwich, which accounts for 23% of all properties in the Borough. The Environment Agency's National Flood Risk Assessment (NAFRA) shows that 84% of these properties are within areas where the likelihood of flooding is low due to protection from defences, including the Thames Barrier. Over 14,700 properties in the Borough were registered to receive flood warnings in March 2013.

Historically flooding has occurred in Greenwich in 1928, 1953, 1965 and 1968. The flood event in 1928 occurred in the north of the Borough, around Greenwich, with small areas of flooding from the tidal Thames. In 1953 extensive flooding occurred along the tidal Thames to the north east of Greenwich. This area is now protected by the Thames tidal defences. The flooding in 1965 and 1968 was a result of fluvial flooding from the Kyd Brook and River Quaggy to the south-west of the Borough. A flood alleviation scheme was completed on the River Quaggy in 2007 with flood storage areas created at Sutcliffe Park to protect 586 properties from a 1 in 70 flood event.

Key environmental issues:

Greenwich falls within the Thames Water's 'London Water Resource Zone', which is identified as seriously water stressed with water resources under high demand. Pressures include population growth and development, water demand, climate change, leakage rates and meeting ecological requirements under the WFD. Measures to help meet future demands include desalination plants or reusing effluent and restrictions on usage.

Rivers currently fail to meet Good Ecological potential under the WFD. The Strategy will need to consider whether any flood risk management measures will lead to adverse impacts on the water bodies within the Borough and whether the Strategy can help contribute to achieving WFD objectives and improving water quality in the Borough. The Strategy needs to ensure that, by improving drainage and reducing flood risk in the Borough, the requirements of the WFD are considered. Important factors that need to be protected include drinking water quality, groundwater and human health, and there should be no adverse impacts on the hydrological regime of various aquatic habitats.

2.7 Soils and geology

The Lower Thames Floodplain Natural Landscape Area covers the tidal Thames and its associated floodplain. The boundaries of this area coincide with a wide band of alluvium, laid down by the river, which has created a broad, level corridor of around 3.5km width through the heart of the city. A broad terrace of river gravels (of the Black Park Gravel Formation) has been deposited over the alluvium within the Vauxhall, Lambeth and Southwark areas. Within the broad alluvial floodplain, the river channel meanders from the margins of the North Thames Gravel Terraces to the southern river bank at Greenwich. In general, the gravel terraces to the north of the floodplain rise less abruptly than those to the south, where a ridge has formed by more resistant bedrock (where the gravelly sands and clays of the Lambeth Group are capped by the pebbly beds of the Harwich Formation). The higher areas of the Borough consist of a sedimentary layer of gravelly soils, known as the Blackheath Beds, which spread through much of the south-east over a chalk outcrop with sands, loam and seams of clay at the lower levels by the river.[19]

Plumstead Common contains deposits of puddingstone, a conglomerate rock formed during a period of global warming 60 million years ago. Gilbert's Pit SSSI is a geological SSSI and an important Lower Tertiary site, displaying one of the most complete sediment sequences in Greater London. The Palaeocene Thanet and Woolwich Beds date to around 55 million years ago, with the beds yielding many fossils of plants, sponges, molluscs, fish and reptiles.

Greenwich Peninsula was heavily used for industrial purposes in the past. A large gasworks, power station and other industries in the late 20th century has resulted in areas of heavily contaminated wasteland.

[19] Natural England (2011) London's Natural Signatures: The London Landscape Framework. 17 South London Clays and Gravels.

Key environmental issues

Flooding events could alter the extent or duration of flooding and therefore the LFRMP will need to consider implications for soil quality, contaminated land and the underlying geology. Impacts on soil quality could then affect other environmental receptors, such as habitats and nature conservation sites that are reliant on the underlying soil characteristics.

2.8 Historic environment

The Royal Borough of Greenwich is renowned for its naval and architectural heritage and for Greenwich Mean Time, the standard for the world's time zones since 1884.

During Medieval times, the Greenwich area was quarried for chalk, gravel and brickearth used for barge beds on the river shore, lime burning and brick making. Burial mounds in Greenwich Park and the church of St Alfege date from the Saxon period, and marks the martyrdom of the Saxon saint. In 964AD King Edgar granted land to St Peters Abbey in Ghent which was later repossessed in 1414 by by King Henry V[20]. Greenwich Palace was built on the waterfront in 1477 for the Duke of Gloucester who enclosed Greenwich Park. The Palace became residency for a number of Kings, most notably Henry VIII, until the Palace of Whitehall was built in the 1530s. The University of Greenwich and Trinity Laban Conservatoire now stands in the Palace of Greenwich's place.

Eltham Palace was also inhabited by royalty in 1305 with Edward II and later, Henry VII, resident there. It was later abandoned and turned in to a private residence, before being restored in the 20th Century and allocated to the army in 1944. In 1992 English Heritage restored the house and gardens and opened it to the public in 1999[21]. Ship building took place along the banks of the River Thames at Dartford and Woolwich from 16th Century continuing until 1869.

Historic assets in the Borough include:

- Ten scheduled monuments: these are historic assets of national importance and include a burial mound, Anglo-Saxon cemetery, Romano-Celtic Temple, Greenwich Observatory and Eltham Palace.
- 534 Listed Buildings: these are statutorily designated and include 28 Grade I Listed Buildings, which includes The Royal Observatory wall and clock, Royal Naval College and National Maritime Museum.
- Four historic parkland areas: these are assets included on the Register of Parks and Gardens of Special Historic Interest: Eltham Palace, Greenwich Park, Well Hall Pleasaunce and Repository Woods.
- 20 Conservation Areas: these are located in both urban and park areas and include the town centres of Blackheath, Greenwich, Greenwich Park, Eltham Palace, Woolwich Common and Plumstead Common.
- There is one World Heritage Site: in 1997, Maritime Greenwich was added to the list of World Heritage Sites, for the concentration and quality of buildings of historic and architectural interest. These can be divided into the group of buildings along the riverfront, Greenwich Park and the Georgian and Victorian town centre.

The Borough's Heritage at Risk Register (2014)[22] identifies 15 listed buildings as under threat. The number of listed buildings and scheduled monuments at risk as a result of neglect, decay or inappropriate development has remained the same since 2009. In 2009 there were no places of worship at risk, this rose to one in 2011 and currently remains at risk.

Throughout the Borough there are a number of heritage assets that are not designated as scheduled monuments but are of archaeological interest. In order to recognise these assets an appraisal by English Heritage was undertaken to highlight Areas of High Archaeological Potential (AHAP) in the

[20] East Greenwich Conservation Area Appraisal 2010

[21] Royal residences of Greenwich http://www.royalgreenwich.gov.uk/info/200064/local_history_and_heritage/1056/royal_residences_of_greenwich

[22] English Heritage (2013) Heritage at Risk Register 2014. http://www.english-heritage.org.uk/publications/har-2014-registers/lo-HAR-register-2014.pdf

Borough. This identified a wide area of potential along the River Thames in the north of the Borough with smaller areas identified throughout the rest of the Borough[23].

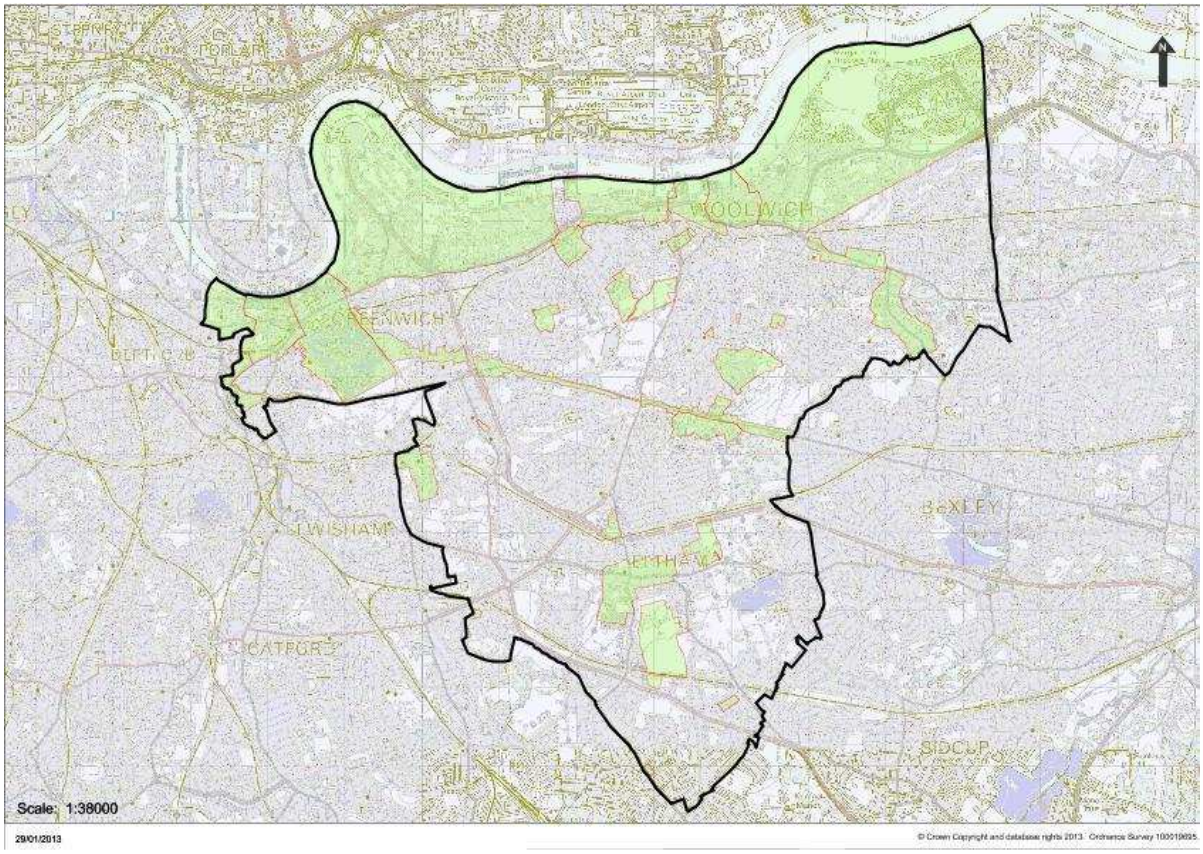

Figure 2-4: Areas of High Archaeological Potential (Source: Royal Borough of Greenwich)

Key environmental issues:

Greenwich contains a wealth of historic assets including a World Heritage Site. However, a number of the most important of these assets are currently assessed as being under threat. There is a risk that adverse impacts upon aspects of Greenwich's cultural heritage could arise from flooding and increased flood risk in the future, whilst the construction and implementation of the flood risk management options selected by the Strategy could also have adverse effects, including indirect impacts on the setting of heritage assets. Potential benefits may also arise from reduced flood risk to assets as a result of implementation of the Strategy. However, it should be noted that some archaeological assets require waterlogged conditions to preserve them.

Development within AHAPs may require preliminary archaeological site investigations to assess the archaeological potential, and plan to avoid or mitigate the impact of a proposed development on potential archaeological remains in the area.

2.9 Population

The Borough's population in 2011 census was approximately 254,600, which is an increase of approximately 18.67% since 2002, the 6th highest growth of all London boroughs. This is more than the England national average of 6.9% increase over the same period and London's average of 14%[24]. Population is predicted to continue to rise, with an increase of approximately 21% between 2011 and 2021, and 26% in the 20 years between 2011 and 2031[25].

[23] Royal Borough of Greenwich Core Strategy Archaeology http://greenwich-consult.limehouse.co.uk/portal/planning/cs/submission_version/core_strategy_with_development_management_policies_submission_version-_with_proposed_modifications?pointId=1372233638145#section-1372233638145

[24] Census Information Scheme GLA Intelligence 2011 Census first results July 2012 http://data.london.gov.uk/datastorefiles/documents/2011-census-first-results.pdf

[25] Royal Borough of Greenwich Population Data http://www.royalgreenwich.gov.uk/info/200088/statistics_and_census_information/114/population_data

Between 2002 and 2011 there has been an increase in persons aged under 64 living in the Borough and a decline in the number of older persons there. The percentage of people living in the age groups of 0-15 and 16-64 are above the national and London averages with 21.7% of 0-15 year olds (the national average being 18.9%) and 68% of 16-64 year olds (the national average being 64.7%) respectively.

Greenwich's population for working age people (20-64 year olds) is 62.9%, which is below London's average of 64.4%. It is however, higher than the England and Wales average of 59.6%. The employment rate (proportion of people in employment as a percentage of the working age population) for the Borough has increased steadily from 2010 to 2012 with 69.6% employment rate which is above London's average of 68.9%[26].

The average household size in Greenwich increased from 2.28 to 2.48 in the 10 year period to 2011, which challenges the broad assumption that household size is generally in decline. The number of households across the Borough increased by 8.86% between 2001 and 2011 to 101,000, which is the 12th highest increase of all London boroughs. Property types vary and include houses, flats and bungalows, with the most common type of accommodation being purpose built flats. Approximately 63.1% of dwellings are private households, with 35.9% local authority or other social rented households.

2.9.1 Health

Public Health England's 2013[27] health profile report for Greenwich shows that in general the health of people in Greenwich varied compared to the rest of England. Life expectancy, child obesity and deprivation are worse than the England average, however levels of GCSE attainment, alcohol-specific hospital stays for under 18s, smoking during pregnancy, adult health eating and adult obesity are better than the England average. The key causes of death in Greenwich remain circulatory disease, cancer and respiratory disease all of which are above the England average. However, the rates fell between 2001 and 2010 and life expectancy across the Borough, like elsewhere across the country, has increased over the last 20 years although is still below the England average for both men and women.

Several health related priorities have been identified by the Council in the Borough. These include extending prevention programmes, reduce smoking prevalence, tackling childhood obesity and reducing domestic violence.

2.9.2 Deprivation

Social deprivation is an issue in the Borough, as is the case across London with Greenwich being the 8th most deprived Borough in London. The Index of Multiple Deprivation provides a measure of relative deprivation across England and was most recently published in 2010. Deprivation is not spread evenly across the country with Greenwich being the 28th most deprived Borough in England[28].

This growing population will place increased demand on a range of resources and the Borough's water and sewerage infrastructure, which could be exacerbated by the effects of climate change. Linked to this may be increased demands for development and pressure on the existing housing provision, which may result in greater need for development in areas at risk of flooding.

2.10 Material assets

The Borough benefits from a range of transport infrastructure. There are three main railway lines which provide links into central London and Kent. The Docklands Light Railway has four stations in the Borough, which provides access to economic and social opportunities and was recorded to have served just under eight million passenger journeys in 2012. There are also 40 bus routes in the Borough. There are plans for a new cross rail link to link east and west London with a high frequency rail service. This will travel through the north of the Borough with stations in Woolwich and Abbey Wood.

[26] Royal Borough of Greenwich Employment Figures http://www.royalgreenwich.gov.uk/info/200088/statistics_and_census_information/118/employment_figures

[27] Greenwich Health Profile 2013 Public Health England http://www.apho.org.uk/default.aspx?RID=49802

[28] English Indices of Deprivation 2010 http://www.london.gov.uk/sites/default/files/Briefing-2011-06-Indices-Deprivation-2010-London.pdf

The major roads in the Borough include:

- A102 which provides access across the River Thames through the Blackwell Tunnel;
- A206 travels across the north of the Borough;
- A205 south circular linking to the North Circular Road via the Woolwich Ferry;
- A207 Shooters Hill Road which follows the route of the former Watling Street Roman Road;
- A2 Rochester relief road forming part of the London Strategic Road Network passing through the borough east-west into the centre of London.

There are 86km of cycle routes across the Borough. The most notable one is the National Cycle Route 1: The Thames Path, which runs along the southern bank of the River Thames. It is a long distance route connecting Dover and the Shetland Islands. There are also a number of small circular routes in the south of the Borough.

Woolwich Ferry service is the only ferry crossing in the Borough, which provides a link across the River Thames. However, the Borough's Core Strategy highlights the need to improve and increase cross river links[29].

There are some areas in the Borough that suffer from poor transport links and highlighted to be between employment areas in the north and residential areas in the south, such as Kidbrooke and Eltham. Transport links are also poor in Thamesmead and Charlton Riverside. This hinders industry, development and regeneration exacerbating poverty and social inclusion[30].

The Thames Gateway is considered to be the largest regeneration project in Europe over the coming 20 years with 120,000 new homes expected to be built and 180,000 new jobs created[10]. As part of the Thames Gateway development which incorporates 12 London boroughs, there are plans to build approximately 30,735 dwelling within the Royal Borough of Greenwich in the period 2013-2028, the second largest housing target of all London boroughs[31]. The London Plan has identified a number of Opportunity Areas where the majority of the proposed housing will be built, in Greenwich these areas are focused along the Thames waterfront.

2.10.1 Economy

The fastest growing business sector in the Borough is IT and Communications centred around Greenwich Town Centre, the Digital Peninsula in Greenwich, and Woolwich. Creative Industries are also growing fast in the Digital Peninsula, Woolwich, west Greenwich and Charlton. Tourism is a key sector that benefits from the Boroughs rich cultural heritage. Employment in the retail sector accounts for just under a fifth of the Boroughs employment.

There are proposals for two new urban quarters in the Borough at Charlton Riverside and Greenwich Peninsula to replace the existing low density industrial units in these areas. In Charlton Riverside employment areas will be consolidated to maximise land use, development of 3,500 new dwellings and new provision for open space will be provided. Out of town retail will be reduced in this area.

2.10.2 Green infrastructure

In addition to the traditional material assets identified above, the Borough contains a range of significant green infrastructure and public green spaces, which positively contribute to public health and wellbeing, as well as the wider environment. Open space contributes to 30% of the total area of Greenwich Borough and is made up of Metropolitan Open Land, Green Belt, Green Chain and Community Open Space.

The South East London Green Chain forms a 64km green network of footpaths and open spaces including historic parks, ancient woodlands, allotments and commons. The Green Chain extends through the London Boroughs of Bromley, Bexley, Greenwich and Lewisham and is a valuable

[29] London Borough of Greenwich Core Strategy Infrastructure and Movement http://greenwich-consult.limehouse.co.uk/portal/planning/cs/submission_version/core_strategy_with_development_management_policies_submission_version-_with_proposed_modifications?pointId=1372233638149#section-1372233638149

[30] London Borough of Greenwich Core Strategy http://greenwich-consult.limehouse.co.uk/portal/planning/cs/submission_version/core_strategy_with_development_management_policies_submission_version-_with_proposed_modifications?pointId=1372233638149#section-1372233638149

[31] Spatial Strategy http://greenwich-consult.limehouse.co.uk/portal/planning/cs/submission_version/core_strategy_with_development_management_policies_submission_version-_with_proposed_modifications?pointId=1372233638136#section-1372233638136

recreation amenity, landscape and wildlife resource for the wider south east London Boroughs. The Green Chain runs up from the south along the east of the Borough and continues up to the River Thames in the North. It also forms part of one of London's strategic walking routes, the 'Capital Ring', a 126km walk around London[32].

Key environmental issues:

The Borough experiences good internal and external transport links. However, there are areas that have been identified where there is a lack of transport provision. This and the predicted increase in population, will place greater pressure on the transport network, which could be exacerbated by increased future development pressure.

Flooding of transport assets has the potential to cause disruption to movement of residents, commuters and emergency services. This could have short-term impacts on the local and regional economies, and longer-term impacts on transport planning, utilities provision and social mobility.

Flood risk management measures, such as flood defences, have the potential to impact upon cycle routes and footpaths along river corridors. New development should complement the core strategy for sustainability in Greenwich. New infrastructure should ensure accessibility through walking and cycling is promoted and enhanced as part of the development process.

2.11 Air quality

Greenwich falls into London's low emission zone which discourages a number of older, diesel vehicles including lorries and buses from entering the zone by charging a penalty to those affected vehicles. Periodic reviews of air quality in the Borough are undertaken for a range of potentially harmful substances. These are required to meet the targets set by the Government's Air Quality Strategy (2007)[33]. National air quality objectives (AQOs) have been designated for the following contaminants: ground level ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), particulates, Benzene, 1,3-Butadiene and Lead. If further assessments verify the original finding of excessive contaminant concentrations, the area is designated as an Air Quality Management Area (AQMA) for which objective contaminant levels are set and strategies to achieve them drawn up.

The air quality review and assessment in Greenwich found that targets for nitrogen dioxide (NO_2) and particles (PM_{10}) would be exceeded in the Northern part of the Borough and at locations close to the most congested roads. Five AQMAs were consequently declared in June 2001.

Key environmental issues:

Generally, air quality in the Borough meets the targets set by the government in the Air Quality Objective (AQO). However, greater pressures on air quality may occur in the future through increases in the population of the Borough, greater development and increased traffic congestion. This could lead to the designation of additional AQMAs to address local impacts on air quality. The Strategy is not likely to impact on air quality in the Borough, with any impacts, such as through increased flood risk management activities, unlikely to be significant.

2.12 Climate

Greenwich experiences a relatively stable climate with mild variations between average highs and lows. The average annual temperature high is 15.3°C and low temperature is 7.8°C. The area experiences adequate rainfall year round, with 109.4 precipitation days each year and an average annual rainfall of 611mm[34] compared to the UK average of 557.4mm[35].

Carbon emissions for Greenwich in 2008 totalled 1,233 kilotonnes (kt) with domestic emissions accounting for 39% of the Borough total. Taking into account the demolition of old buildings and the construction of new more energy efficiency buildings, it is expected that emissions from the domestic sector will rise by 1.5kt per annum (pa) with a total rise of 67 kt/pa by 2050. Transport emissions were found to account for 25% of the total with the largest proportion arising from private car travel.

[32] London Borough of Bromley UDP South East London Green Chain Policy G7 http://www.bromley.gov.uk/UDP/written/cpt8.htm

[33] UK Government (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69336/pb12654-air-quality-strategy-vol1-070712.pdf

[34] Weatherbase. (2013). www.weatherbase .com.

[35] Met Office (2013) http://www.metoffice.gov.uk/public/weather/climate/city-of-london#?tab=climateTables

An increase of 188.6 kt/pa from the transport sector is predicted by 2050. Commercial and industrial emissions account for 37% of the Borough total with growth in this sector expected to contribute an extra 1300 kt/pa by 2050. Greenwich has CO_2 emissions of 6.2 tonnes per capita, compared to the London average of 6.9[36].

Greenwich Peninsula was heavily used for industrial purposes in the past. Remaining industry buildings include Alcatel, a recently closed (2009) glucose plant and two large marine aggregate terminals. One of the two gas holders also remains. Recent development has included infrastructure, residential, commercial space and the former Millennium Dome. Continued residential regeneration is ongoing.

The UK Climate Projection (UKCP09)[37] provides probability-based projections of key climate variables, such as temperature and rainfall at a higher geographic resolution than has previously been available. Projections are based on the Intergovernmental Panel on Climate Change's 'business as usual' emissions scenario.

Current predictions indicate towards significant and more variable temperature and rainfall predictions in future. Also expected are greater peak temperatures and prolonged hot periods. Summer mean temperatures are predicted to rise, on average, by 4.5°C. Minimum temperature rise is expected to be no less than 2.4°C and maximum rise is not expected to exceed 7.5°C. Winter mean temperature is also expected to increase, however by a lesser amount. The average, predicted rise is 3.7°C, while the minimum increase expected is 2°C and the maximum 5.7°C [38].

Key environmental issues:

The projected rise in temperatures, sea level and weather extremes through climate change could affect the magnitude and frequency of extreme flows along water courses within the Borough with a resulting unpredictable loss or gain of certain habitats and species. Inevitable changes to vegetation composition may occur with certain communities becoming vulnerable to extreme hydrological conditions. With rainfall frequency and intensity set to significantly increase in the coming decades, the likelihood of river flooding and overwhelming of drains and sewers will rise due to the increased surface runoff. This in turn will lead to localised flood events and increased erosion. To accommodate the increased likelihood of such events the Strategy must implement measures aimed at coping with them.

If such climate change projections are realised, the adverse risk and impact toward Greenwich's infrastructure, public health and the natural environment has the potential to be great.

With regard to the natural environment changing climate, mainly that of changing temperatures poses the biggest threat. Species and habitat abundance and richness will become threatened as a result of changing habitats, drier soils and increased competition from invasive species throughout the Boroughs watercourses.

The Strategy options, could potentially, both directly and indirectly, lead to an increase in greenhouse gas emissions as a result of construction and maintenance activities. Emissions could be reduced by selecting, sustainable building practices and materials.

2.13 Scoping conclusions

Following the scoping consultation exercise it was possible to scope out air quality as an SEA issue as it is unlikely that there will be a significant environmental impact on air quality in the Borough from implementation of the Strategy. A summary of the scoping conclusions are given in Table 2-2.

[36] AEA Energy and Environment/DEFRA 2005

[37] UK Climate Projections (2009) http://ukclimateprojections.metoffice.gov.uk/

[38] Met Office 2013.

Table 2-2: SEA scoping assessment summary

Receptor	Scoped In	Scoped Out	Conclusion
Landscape and visual amenity	Yes	No	Flood risk management could potentially impact on local landscape features, potentially within areas of open green space and other locally important landscape areas.
Biodiversity, flora and fauna	Yes	No	There are a number of SSSIs, SNCIs and LNRs within Greenwich at risk from flooding. Future incidences of flooding could potentially change the underlying nature of habitats and the Strategy policies may present opportunities for biodiversity gain. The Strategy measures could improve the river channel by removal of blockages, which would be of benefit to fish passage.
Water environment	Yes	No	Flood risk management measures could potentially affect the water environment both positively and negatively. The Strategy could give rise to changes in flood risk and water quality, and could affect provision of water resources. The Strategy needs to be assessed to determine compliance with the objectives of the WFD.
Soils and geology	No	Yes	The Strategy is not likely to have a significant effect on soils and geology in the Borough due to the localised nature of any potential impacts and the highly urban nature of the area.
Historic environment	Yes	No	There are a large number of historic assets in the Borough that could be affected by changes to flooding and flood risk management measures. Opportunities may exist to protect and enhance important assets or negative impacts could occur due to increased flood risk to vulnerable assets.
Population	Yes	No	The Strategy has the potential to provide significant positive benefits to the population of the Borough.
Material assets	Yes	No	Material assets could benefit from reduced flood risk, but the Borough could be significantly affected by increased flood risk to these assets.
Air quality	No	Yes	The Strategy is not likely to have a significant effect on air quality in the Borough due to the localised nature of any potential impacts.
Climate	Yes	No	The Strategy may include mitigation, resilience and adaption responses and measures that could contribute to addressing the future impacts of climate change effects. Opportunities to improve climate change adaptation will be considered in the SEA.

3 SEA framework

3.1 Introduction

The SEA framework is used to identify and evaluate the potential environmental issues associated with the implementation of the Strategy. The framework comprises a set of SEA objectives that have been developed to reflect the key environmental issues identified through the baseline information review. These objectives are supported by a series of indicators, which are used as a means to measure the potential significance of the environmental issues and can also be used to monitor implementation of the Strategy objectives. These Strategy objectives are tested against the SEA framework to identify whether each option will support or inhibit achievement of each objective.

Table 3-1 below summarises the purpose and requirements of the SEA objectives and indicators.

Table 3-1: Definition of SEA objectives and indicators

	Purpose
Objective	Provide a benchmark 'intention' against which environmental effects of the plan can be tested. They need to be fit-for-purpose.
Indicator	Provide a means of measuring the progress towards achieving the environmental objectives over time. They need to be measurable and relevant and ideally rely on existing monitoring networks.

3.2 SEA objectives and indicators

SEA objectives and indicators have been compiled for each of the environmental receptors (or groups of environmental receptors) scoped into the study (Table 2-2). The SEA objectives used to assess the Strategy are given in Table 3-2 below.

Table 3-2: SEA objectives and indicators

Receptor	Objective		Indicator
Landscape	1	Protect the integrity of the Borough's urban and rural landscapes, and do not cause an adverse impact on the Borough's important views and landmarks.	Changes in the condition and extent of existing characteristic elements of the landscape. The condition and quality of new characteristics introduced to the environment. Number of historic assets at risk of flooding.
Biodiversity, flora and fauna	2	Protect and enhance important and notable habitats and species in the Borough.	Area of designated site adversely affected by flooding. Monitoring of reported status of designated sites. No net loss of land designated as nature conservation sites Area of habitat created as a result of implementation of the Strategy (e.g. flood storage areas creating wetland habitat). Number of barriers to migration removed.
	3	Maintain and enhance habitat connectivity and wildlife corridors within the Borough.	
	4	Maintain existing, and where possible create new, riverine habitat to benefit aquatic species and fisheries, and maintain upstream access.	
Water environment	5	Improve the quality and quantity of the water in the rivers.	River quality monitoring assessments. Reported pollution incidents. Number of sites with SuDS schemes installed. Number and volume of Environment Agency licensed abstractions. Numbers of sites with high pollution potential (e.g. landfill sites, waste water treatment works) at risk from flooding.
	6	Do not inhibit achievement of the WFD objectives and contribute to their achievement where possible.	Percentage of river lengths achieving 'Good' ecological status or an improvement on existing status. Assessment of FRM options and their impact (e.g. disconnection/ reconnection with floodplain, in-channel works/dredging, barriers to fish movement, reinstatement/ removal of natural morphology). The proportion of conservation area at risk of flooding. The number of designated and non-designated heritage assets harmed by flood risk management measures, including impacts on their settings. The number of flood risk management measures implemented that conserve and enhance heritage assets.

Receptor	Objective		Indicator
Historic environment	7	Preserve and where possible enhance important historic and cultural assets in the Borough.	Number of historic assets at risk from flooding.
Population	8	Minimise the risk of flooding to communities.	Number of residential properties at risk of flooding. Number of key services (e.g. hospitals, health centres, residential/care homes, schools etc.) at risk from flooding.
	9	Increase the use of sustainable drainage systems (SuDS), particularly in all new developments.	Number of sites with SuDS schemes installed.
Material assets	10	Minimise the impacts of flooding to the Borough's transport network.	Length of road and rail infrastructure at risk from flooding. Number of key infrastructure assets (e.g. power stations, sub-stations) at risk from flooding.
Climate	11	Reduce vulnerability to climate change impacts and promote measures to enable adaptation to climate change impacts.	Number of residential properties at risk of flooding. Number of key services (e.g. hospitals, health centres, residential/care homes, schools etc.) at risk from flooding. Area of habitat created as a result of implementation of the Strategy (e.g. flood storage areas creating wetland habitat). Number of barriers to migration removed.

4 Strategy alternatives

4.1 Developing alternatives

The SEA Directive requires an assessment of the plan and its 'reasonable alternatives'. In order to assess reasonable alternatives, different strategy options for delivering the Strategy have been assessed at a strategic level against the SEA objectives, and the environmental baseline as detailed in Section 2. The results of this assessment will be used to inform the decision-making process in choosing a preferred way of delivering the Strategy.

4.2 Appraisal of actions to improve flood risk

The Strategy has the purpose of managing and reducing local flood risk in Royal Borough of Greenwich. The strategy objectives have been assessed against the SEA objectives for each of the following options as shown in Table 4-1.

1. **Do nothing**: where no action is taken and existing assets and ordinary watercourses are abandoned.
2. **Maintain current flood risk management regime**: where existing assets and watercourses are maintained as present in line with current levels of flood risk. Existing infrastructure is not improved over time and the effects of climate change are not taken into account; and
3. **Manage and reduce local flood risk**: take action to reduce the social, economic and environmental impact due to flooding.

Table 4-1: Assessment of the strategy and alternative options against the SEA objectives

SEA Objectives		Options and Effects		
		Do Nothing	Maintain current flood risk management regime	Manage and reduce local flood risk
1	Protect the integrity of the Borough's urban and rural landscapes, and do not cause an adverse impact on the Borough's important views and landmarks.	Potential negative effect resulting from no management that could adversely impact on sensitive urban landscape character. However, abandonment of assets may allow for the development of a more natural watercourse, which may enhance the local landscape character, particularly in the open spaces.	Little/no change to the baseline in the short to medium term. However, with increasing flood risk, negative effects could occur on sensitive urban landscape character, whilst positive effects may occur in open spaces as the Borough's watercourses increasingly reconnect to their floodplain.	Potential for managing and promoting this objective through sensitively designed flood risk management schemes, which enhance local landscape character, historic assets and the SCAs. Conversely, inappropriate management schemes could damage key landscape features and characteristics.
2	Protect and enhance important and notable habitats and species in the Borough.	Potential for both adverse and beneficial impacts. For example, abandonment of assets may allow for the development of a more natural watercourse (enhancing certain notable species and habitats). However, there would be an increased risk of spreading non-native invasive species and potential impacts on water quality through increased flooding.	Little/no change to baseline in the short to medium term. Increased flooding in the future may provide opportunities for new habitat creation, but may also result in the spread non-native invasive species or adversely impact on habitats intolerant of increased inundation or changes in water quality.	Potential for both adverse and beneficial impacts as a result of active management. Opportunities may arise to enhance habitats and species through the implementation of multi-functional flood risk management measures, such as the provision of new green infrastructure.
3	Maintain and enhance habitat connectivity and wildlife corridors within the Borough.	Potential for both adverse and beneficial impacts. Abandonment of assets would allow for corridors to develop that would be unrestricted by flood risk assets. However, the increased risk of spreading non-native invasive species would inhibit the biodiversity value of wildlife corridors.	Little/no change to baseline in the short to medium term. Increased flooding in the future may provide opportunities for new habitat creation, but may also result in the spread non-native invasive species or adversely impact on habitats intolerant of increased inundation or changes in water quality.	Potential for both adverse and beneficial impacts as a result of active management. Opportunities may arise to enhance habitats and species through the implementation of multi-functional flood risk management measures, such as the provision of new green infrastructure.

SEA Objectives		Options and Effects		
		Do Nothing	Maintain current flood risk management regime	Manage and reduce local flood risk
4	Maintain existing, and where possible create new, riverine habitat to benefit aquatic species and fisheries, and maintain upstream access.	Potential for both adverse and beneficial impacts. For example, existing habitat may deteriorate as a result of increased flooding (however, this will often depend on what the site is designated for) and blockages may occur due to the movement of sediment. However, abandonment of assets may allow a more natural riverine system to develop.	Little/no change to baseline. However as a result of increased flooding in the future due to climate change new habitats may be created or existing wetland habitats enhanced. However, habitats intolerant of increased inundation or changes in water quality may be adversely affected.	Potential for both adverse and beneficial impacts as a result of active management. Significant opportunities may exist for habitat creation as a result of implementing measures to reduce local flood risk. Conversely, the introduction of new assets may damage riverine habitat and introduce blockages for fish access to upstream watercourses if not implemented appropriately.
5	Improve the quality and quantity of the water in the rivers.	Potential for both adverse and beneficial impacts. For example, abandonment of assets may allow for the development of a more natural watercourse and fewer assets are likely to reduce constrictions on water flow and hence water availability and quantity. However, there would be no management of water quality issues such as run-off, whilst flood risk to contaminated sites may increase, leading to increased surface and groundwater contamination.	Little/no change to baseline levels in the short to medium term. However, increased flood risk in the future may result in a reduction in surface water and groundwater quality due to contamination from surface water runoff or from contaminated sites.	Management of watercourses allows water quality to be monitored and potentially improved. Taking further action to reduce local flood risk may also improve water quality through reduced flood risk to potentially contaminated sites. However, the introduction of further flood risk assets to watercourses may result in constrictions to water flow, reducing water availability. Careful management of the implementation of such assets can prevent these adverse effects.
6	Do not inhibit achievement of the WFD objectives and contribute to their achievement where possible.	Potential for both adverse and beneficial impacts. For example, abandonment of assets may allow for the development of more natural watercourses. However, there would be an increased risk of spreading non-native, invasive species through flooding and pollution to watercourses could become more widespread.	Little/no change to current measures to meet WFD objectives.	Potential for both adverse and beneficial impacts depending upon the specific statuses and objectives of the waterbody as identified in the RBMP. Opportunities for achieving WFD objectives may arise through the implementation of measures to reduce local flood risk.
7	Preserve and where possible enhance important historic and cultural assets in the Borough.	Potential for both adverse and beneficial impacts. Historic environment assets and cultural heritage assets may be exposed to greater damage and deterioration through increased flood risk. Conversely, increased water inundation may help preserve some assets dependent on waterlogging, whilst the declining condition of flood risk management assets from no management and greater connectivity to the floodplain could improve the setting of historic assets.	Little/no change to baseline. However, in the future historic environment assets and cultural heritage may be exposed to increased flooding and damage due to climate change.	Potential for both adverse and beneficial impacts as a result of active management, for example through increased protection to vulnerable historic environment assets or improvements to their settings.
8	Minimise the risk of flooding to communities.	Increased exposure to flood risk from a combination of no management and climate change. This could lead to a greater number of people and their properties at risk of flooding, causing greater damage and disruption, and increases in social	No improvements to health and well-being as existing risk maintained and risk may increase in the future as a result of climate change.	Active management to reduce local flood risk should help to protect residential properties and key social infrastructure services from flooding. This has the potential to create a range of social benefits including reducing associated health impacts and social deprivation.

SEA Objectives		Options and Effects		
		Do Nothing	Maintain current flood risk management regime	Manage and reduce local flood risk
		exclusion, deprivation and health risks.		
9	Increase the use of sustainable drainage systems (SuDS), particularly in all new developments.	This option would result in no increase in the use of SuDS in the future. Surface runoff volumes would be likely to increase, further exacerbating flood risk events. In addition, the declining condition from no management of existing SuDS schemes and lack of additional schemes may reduce the ability to manage future impacts of climate change.	Little/no change to the baseline in the short to medium term. However, with increasing flood risk, the lack of additional SuDS schemes may reduce the ability to manage future impacts of climate change.	Active management to reduce flood risk may incorporate the greater use of SuDS schemes to reduce the rate and volume of surface water runoff. This will contribute to climate change mitigation and adaptation initiatives and can provide a range of other environmental benefits, including biodiversity enhancements and the provision of new recreation and amenity opportunities.
10	Minimise the impacts of flooding to the Borough's transport network.	This option is likely to result in increased flood risk to key infrastructure, which would cause significant disruption to the Borough, impacting on human and economic activity and the environment.	This option would maintain the current risk levels, although risk may increase in the future as a result of climate change.	Flood risk management options may reduce flood risk to key critical infrastructure, reducing disruption during flood events and enabling a more effective response.
11	Reduce vulnerability to climate change impacts and promote measures to enable adaptation to climate change impacts.	This option would result in no active adaptation or response to climate change (specifically, flood risk management). This would lead to a risk of adverse impacts to all receptors in the short, medium and long-term. However, the loss of existing flood risk management assets may result in a greater reconnection of the river to its floodplain, which could benefit a range of habitats and species.	No adaptation or response to climate change in terms of flood risk management. High risk for adverse impacts to all receptors in the short, medium and long-term.	The Strategy includes full consideration of climate change adaptation in terms of flood risk management. This will reduce the overall risk of flooding and the potential for flood damages in the short, medium and long-term future, benefiting both people and property.

The assessment described in Table 4-1 indicates that Option 1 (do nothing) is likely to result in a number of significant adverse impacts, particularly in relation to people and property, and other environmental assets including historic assets and biodiversity, where increased flooding may create new pathways for the spread of invasive non-native species. Surface water and groundwater quality could also be adversely affected, with increased flooding of contaminated sites leading to greater impacts on water resources. Conversely, increased flood risk may result in greater connectivity between watercourse and their floodplains, offering opportunities for habitat creation of benefit to a range of protected and notable species.

Option 2 (maintain current flood risk management regime) is likely to result in little or no change in the environmental baseline in the short to medium term as the existing flood risk management regime continues to maintain existing levels of flood protection. However, in the future, as a result of climate change, flood risk will increase, resulting in many of the impacts identified under Option 1, although potentially to a lesser extent and significance.

Option 3 (manage and reduce local flood risk) has the potential to provide a range of environmental benefits. Flood risk management initiatives, if designed and implemented in an appropriate manner, could have multiple benefits. This could include reducing flood risk to people and property, contributing to the protection of heritage assets and improvements in water quality, and providing new opportunities for habitat creation and the provision of recreation and amenity assets. Conversely, flood risk management measures, if implemented in an inappropriate manner, could result in adverse effects on a range of environmental features. However, this risk is managed through the preparation of this SEA and through the planning and consenting process, which is likely to require consideration of the sustainability of a project prior to its implementation. Therefore, it is evident that by doing nothing or maintaining current levels of management, there are likely to be

detrimental effects on the SEA objectives, which are likely to be prevented by carrying out active flood risk management as proposed by the Strategy.

4.3 Strategy objectives and measures

The following draft Strategy objectives and underpinning measures have been developed. The SEA appraises these objectives and measures to determine whether they would inhibit achievement of the SEA objectives, or conversely, contribute to their delivery.

Table 4-2: The Strategy actions that contribute towards the Strategy objectives

Objective reference	Objective	Action ID
N1	Understanding and Working Together: 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.	All
N2	Development Control: Avoiding inappropriate development in areas of flood and coastal erosion risk and being careful to manage land elsewhere to avoid increasing risks.	1, 2, 6, 8, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 24, 26, 39, 42.
N3	Reducing Risk: Maintaining and improving FCERM systems to reduce the likelihood of harm to people and damage to the economy, environment and society.	1, 2, 6, 8, 10, 12, 13, 14, 16, 17, 28, 29, 31, 43, 44, 48, 58, 61, 64, 65.
N4	Improve Public Awareness: Building 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.	2, 6, 7, 8, 12, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 39.
N5	Improved Emergency Planning and Recovery: Improving the detection, forecasting and issue of warnings of flooding, co-ordinating a rapid response to flood emergencies and promoting faster recovery from flooding.	3, 4, 5, 7, 9, 15, 17, 19, 22, 23, 24, 25, 26, 28, 29, 64, 65.
G1	Support / deliver sustainable growth of the economy, make the area a nice place to work and do business.	1, 3, 4, 5, 6, 7, 8, 9, 18, 19, 20, 22, 23, 24, 25, 27, 28, 29, 30, 32, 33, 34, 35, 37, 38, 40, 46, 50, 52, 53, 54, 55.
G2	Help to support a better quality of life for resident and visitors.	3, 4, 7, 9, 13, 14, 18, 19, 20, 21, 26, 27, 58.
G3	Contribute to building safer communities.	1, 3, 4, 9, 14, 18, 19, 20, 26, 27, 58.
G4	Provide quality clean and green spaces for the public to enjoy and make use of.	1, 3, 9, 11, 12, 14, 26, 27, 31, 32, 33, 42, 44, 61, 64, 65.
G5	Support more active amenity within public spaces to improve health in the community.	1, 4, 5, 6, 8, 9, 14, 15, 16, 20, 21, 23, 24, 25, 26, 27, 61, 65.
G6	Improve the community understanding of local flood risk so they can take action to reduce the risk to themselves and their property.	1, 3, 5, 6, 7, 9, 10, 14, 18, 20, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 37, 38, 40, 42, 43, 44, 47, 48, 50, 54, 55, 56, 58, 61, 62, 63, 64, 65, 66.
G7	Promote social inclusion and tackle deprivation and discrimination.	1, 3, 7, 9, 14, 18, 19, 20, 24, 27, 42, 58, 66.
L1	Deliver outcomes that make best use of public resources.	1, 2, 3, 6, 7, 10, 11, 13, 14, 17, 18, 20, 21, 24, 26, 28, 31, 32, 33, 35, 36, 41, 42, 44, 49, 50, 51, 52, 53, 54, 55, 58, 59, 60, 61, 64.
L2	Encourage flood management activities by private owners of watercourses (riparian owners) and flood defence structures to take action to reduce the risk to themselves, their property, and others.	2, 5, 6, 8, 10, 12, 13, 17, 22, 23, 28, 29, 30, 35, 36, 37, 39, 41, 43, 44, 47, 48, 49, 50, 52, 59.
L3	Engage with the community with a focus on protecting and informing the young and vulnerable and encouraging people to local groups to value and care for green infrastructure used to manage flood risk.	2, 3, 11, 12, 13, 16, 17, 22, 23, 32, 35, 36, 41, 43, 45, 46, 49, 51, 55, 59, 60, 61, 62, 63, 64, 66.
L4	Provide open, transparent governance of local flood risk management and work with local communities to shape response.	1, 2, 3, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 22, 23, 24, 25, 26, 29, 30, 32, 34, 37, 38, 39, 42, 44, 46, 53, 54, 55, 58, 65.
L5	Encourage design and development that augments and enhances the cultural heritage of the borough.	1, 2, 5, 8, 10, 11, 12, 13, 15, 16, 17, 20, 21, 24, 31, 32, 35, 36, 38, 39, 41, 43, 45, 49, 51, 52, 56, 59, 60, 61, 62, 63, 64, 66.

5 Appraisal of The Strategy objectives to improve flood risk

5.1 Impact significance

The unmitigated impacts of the Strategy objectives on achieving the SEA objectives were identified through the analysis of the baseline environmental conditions and use of professional judgement. The significance of effects was scored using the five point scale summarised in Table 5-1. If a high level of uncertainty regarding the likelihood and potential significance of an impact (either positive or negative) was identified, it was scored as uncertain.

Table 5-1: SEA appraisal codes

Impact significance	Impact symbol
Significant positive impact	++
Minor positive impact	+
Neutral impact	0
Minor negative impact	-
Significant negative impact	--
Uncertain impact	?

Throughout the assessment the following approach was applied:

- Positive, neutral and negative impacts are assessed, with uncertain impacts highlighted.
- The duration of the impact are considered over the short, medium and long term.
- The reversibility and permanence of the impact are assessed (e.g. temporary construction impacts, impacts which can be mitigated against/restored over time or completely irreversible changes to the environment).
- In-combination effects are also considered.

5.2 The Strategy impacts assessment

Table 5-2 and

Table 5-4 provide a summary of the outcomes of the environmental assessment of the draft Strategy objectives and actions respectively. Table 5-3 shows the results of the assessment of cumulative effects of the Strategy objectives on achievement of the SEA objectives, whilst

Table 5-5 assesses the cumulative effects associated with the Strategy actions.

These are qualitative assessments that identify the range of potential effects that the Strategy may have on delivering the SEA objectives. Where a particular Strategy objective is underpinned by a series of actions, each of which may give rise to a range of environmental effects, an overall impact has been identified for each SEA objective.

Table 5-2: Assessment of the Strategy objectives against SEA objectives

Objective ID	The Strategy objectives	SEA objective											Comments
		1	2	3	4	5	6	7	8	9	10	11	
N1	Understanding and Working Together: 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.	0	0	0	0	+	+	+	+	0	+	+	Improving the understanding of local flood risk and coastal erosion issues across the Borough has the potential to contribute to SEA objectives 5 to 8 and 10 and 11 which focus on the reduction of flood risk to the built environment and communities, and adaptation to climate change effects. There is likely to be a neutral impact in relation to all other SEA objectives. Opportunities may exist in the future, as with better understanding and cooperation the natural environment could benefit from flood alleviation schemes that enhance biodiversity.
N2	Development Control: Avoiding inappropriate development in areas of flood and coastal erosion risk and being careful to manage land elsewhere to avoid increasing risks.	0	0	0	0	+	+	0	+	++	+	++	This objective seeks to promote better land management to avoid development in areas at risk of flooding and to reduce the impact that other development is having on flood risk. As such, this objective seeks to reduce flood risk and therefore could benefit people and property (SEA objectives 8, 9 and 11). This objective is also likely to promote the use of SuDS to in both new and existing developments to reduce surface runoff and therefore could make an important contribution to achieving SEA objective 9. Better land management and the retention of remaining floodplain as undeveloped land could have positive effects in terms of maintaining or improving water quality and reducing soil erosion. However, avoiding development on land with flood risk could mean that development will occur elsewhere, and as development land is finite, this could increase pressure for development on Green Belt land. The Strategy should seek to ensure it does not promote development of Green Belt land as this could have significant adverse effects in relation to landscape quality and character, biodiversity and water quality.
N3	Reducing Risk: Maintaining and improving FCERM systems to reduce the likelihood of harm to people and damage to the economy, environment and society.	+	+	+	+	+	+	+	++	+	++	+	This Strategy objective has a positive effect on all the SEA objectives. There is a significant positive impact on SEA objectives 8 and 10 as improving flood risk management will directly lead to a reduction in risk of flooding to communities and assets at a strategic scale. Reducing the impact of flooding may benefit a range of natural and built environment features by reducing the risk of damage, disturbance or habitat loss. There is the potential to reduce economic and social effects since reducing the risk of flooding will reduce the chance of damage to property. Socially, this will reduce stress and anxiety.
N4	Improve Public Awareness: Building 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.	0	0	0	0	0	0	0	+	0	+	+	This objective seeks to improve public awareness of flooding and encourage people to be proactive in managing their own risk. It will therefore have a positive effect in relation to SEA objectives 8, 10 and 11. All other SEA objectives are unlikely to be affected by the objective.
N5	Improved Emergency Planning and Recovery: Improving the detection, forecasting and issue of warnings of flooding, co-ordinating a rapid response to flood emergencies and promoting faster recovery from flooding.	0	0	0	0	0	0	0	+	0	+	+	This Strategy objective contributes positively towards SEA objectives 8, 10 and 11 because it minimises the risk of flooding by improving the co-ordination of response and recovery from flooding. This Strategy objective could have an effect on SEA objectives 1 to 6 and 9 by reducing damage to the environment caused by flooding, which, through the Strategy objective may be reduced. However, the effects from this are unlikely to be significant at a strategic scale, and therefore have been scored neutral.
G1	Support / deliver sustainable growth of the economy, make the area a nice place to work and do business.	+	0	0	0	0	0	0	0	0	0	0	This Strategy objective is focused on promoting sustainable economic growth and improving the value, quality and key characteristics of the Borough so as to make it a more desirable place to live and work. Reducing flood risk and promoting sustainable FRM actions would provide an important contribution to achieving this objective. At this strategic scale, it is not clear what effect this objective would have on achieving improved FRM and therefore it has been scored as neutral for the majority of SEA objectives, which are primarily focused on the implications of FRM. However, taking action to improve the quality of the Borough in a sustainable manner does have the potential to benefit a number of key contributing features such as urban and rural landscape character, areas of greenspace, historic assets and river corridors, which could contribute to a number of the SEA objectives focused on the natural environment.
G2	Help to support a better quality of life for resident and visitors.	0	0	0	0	0	0	0	+	0	+	0	One of the ways to support a better quality of life for residents would be to reduce the risk of flooding. Reducing the risk of flooding would improve quality of life not only by reducing the risk of damage from flooding and therefore the expense and disruption that being flooded can bring, but also reduce stress and anxiety within the community. Therefore SEA objectives 8 and 10 have been scored positively. This Strategy objective does not have an effect on the other SEA objectives because it is not clear what effect this might have on the natural environment at a strategic scale. However, enhancing landscape value, the condition of important habitats and reducing flood risk could all contribute to a better quality of life for residents.
G3	Contribute to building safer communities.	0	0	0	0	0	0	0	+	0	+	+	Reducing flood risk to communities would make an important contribution to achieving this Strategy objective. This Strategy is unlikely to significantly affect the other SEA objectives because the aspect of safety within a community does not include biodiversity, water quality or the historic environment.
G4	Provide quality clean and green spaces for the public to enjoy and make use of.	+	0	0	0	0	0	0	0	0	0	0	Providing quality clean and green spaces for the public to enjoy will have a positive effect on SEA objective 1, as it is likely to support the protection and potential enhancement of key features of the urban and rural landscape. This Strategy objective could also provide opportunities to deliver benefits for biodiversity if measures to promote biodiversity are taken into account. However, this objective is primarily focused on delivering health, recreation and amenity benefits for people and so it is not clear whether it could also provide wider benefits to the natural environment at this strategic scale.
G5	Support more active amenity within public spaces to improve health in the community.	0	0	0	0	0	0	0	0	0	0	0	This Strategy objective is focused on improving the amenity value of public spaces. It is not likely to affect any of the SEA objectives because it is not related to reducing flood risk.
G6	Improve the community understanding of local flood risk so they can take action to reduce the risk to themselves and their property.	0	0	0	0	0	0	0	+	0	+	+	This Strategy objective is very similar to objective N4 in that it seeks to improve awareness of flood risk and encourage people to be proactive in reducing individual risks.
G7	Promote social inclusion and tackle deprivation and discrimination.	0	0	0	0	0	0	0	0	0	0	0	This Strategy objective is not likely to affect any of the SEA objectives. However, reducing flood risk to people and property could make an important contribution to achieving the objective.
L1	Deliver outcomes that make best use of public resources.	+	+	+	+	+	+	+	+	+	+	+	It is not clear what outcomes this Strategy objective would be likely to deliver. However, it appears to support sustainable FRM actions that take into account wider public resources, including natural resources such as water quality, biodiversity, soil quality and landscape character. Therefore this objective would have the potential to make a positive contribution to all of the SEA objectives.
L2	Encourage flood management activities by private owners (riparian owners) and flood defence structures to take action to reduce the risk to themselves, their property, and others.	0	0	0	0	0	0	0	++	0	0	+	Encouraging riparian and flood defence owners to take actions to reduce flood risk is likely to provide benefits to people and property because it will help maintain or improve FRM and reduce flood risk across the Borough. However, individual actions could result in negative effects in relation to the natural environment as actions could adversely affect the biodiversity or landscape quality of affected watercourses. The Strategy needs to ensure that individual actions are undertaken in line with other Strategy objectives so that effective protection of natural and historic environment features is ensured.
L3	Engage with the community with a focus on protecting and informing the young and vulnerable and encouraging people and local groups to value and care for green infrastructure used to manage flood risk.	0	+	+	0	0	0	0	0	0	0	0	Encouraging local communities to value and care for green infrastructure will have a positive effect on SEA objective 2 because it will help to protect habitats within the Borough. As a consequence of this protection, habitat connectivity will also be maintained, therefore having a positive effect on SEA objective 3. This Strategy objective has a neutral effect on the other SEA objectives because it does not change the current FRM, therefore not amending the risk of flooding to the Borough.
L4	Provide open, transparent governance of local flood risk management and work with	0	0	0	0	0	0	0	0	0	0	0	At this strategic scale, it is not clear what effect this objective would have on achieving improved FRM and therefore it has been scored as neutral for the all SEA

Objective ID	The Strategy objectives	SEA objective											Comments
		1	2	3	4	5	6	7	8	9	10	11	
	local communities to shape response.												objectives, which are primarily focused on the implications of FRM.
L5	Encourage design and development that augments and enhances the cultural heritage of the borough.	+	0	0	0	0	0	++	0	0	0	0	Taking action to avoid inappropriate development whilst promoting new development that enhances the cultural heritage potential to provide benefits to SEA objectives 1 and 7. In particular, this objective may deliver significant benefits in terms of protection of the cultural heritage of the Borough. Encouraging development that enhances the cultural assets of the Borough will also have a positive effect on SEA objective 1 as the cultural assets are key characteristics of the landscape of the Borough, therefore the landscape will also be protected and potentially enhanced.

Table 5-3: Cumulative effects of the Strategy objectives on SEA objectives

Receptor	SEA objective		Assessment score	Justification	Timescale, probability and permanence of effects
Landscape	1	Protect the integrity of the Borough's urban and rural landscapes, and promote the key characteristics of the Green Belt.	+	Overall, the Strategy objectives are likely to have a positive effect in relation to this SEA objective as the Strategy includes a number of objectives that seek to deliver improvements to the environmental quality of the Borough or avoid inappropriate development. Objectives L2 in particular aim to promote environmental protection, whilst objective G4 seeks to improve the quality of public greenspace. No adverse effects on this SEA objective were identified. However, objective N2 could potentially result in adverse effects on local landscape character if it inadvertently increases pressure for development on Green Belt land or in other sensitive landscapes.	Whilst several Strategy objectives promote protection of the environment through FRM activities it is unclear what the outcomes of this are likely to be. This will depend upon the type and scale of interventions and the specific locations in which they are delivered. However, the Strategy aims to achieve long term flood risk benefits by influencing the location and quality of development proposals. It's therefore likely that any wider environmental benefits could also be delivered for the long term, although it's equally possible that such benefits would be delivered over a variety of timescales. In addition, the permanence of any wider environmental effects are likely to be dependent upon many other factors and influenced by a range of other proposals.
Biodiversity, flora and fauna	2	Protect and enhance important and notable habitats and species in the Borough.	+	The Strategy includes several objectives that have the potential to deliver benefits to the wider environment, particularly objective L2 and L5. These benefits will be achieved by encouraging development to deliver wider environmental gains. In general, actions to reduce flood risk in urban areas and promote better management of surface water runoff are likely to benefit water quality and water resources in the Borough, by reducing the risk of contaminated materials, fuels, chemical and sediments from entering local watercourses.	The positive effects are likely to occur over a range of timescales. The Strategy may influence development proposals in the short term and in the longer term, and the outcomes of this may be both temporary and permanent depending upon the location and scale of effects that are achieved. At this stage, the scale and permanence of any effects is generally uncertain as the Strategy objectives encourage good design rather than expressly inhibiting bad design. This means that development could be consented that does not improve environmental quality. There are also many variables on the type of development, from geographic scale and location to the type of environmental receptors of the development. For positive effects to be more certain, a robust planning process that considers the Strategy objectives is required.
	3	Maintain and enhance habitat connectivity and wildlife corridors within the Borough.			
	4	Maintain existing, and where possible create new, aquatic habitat to benefit aquatic species and fisheries, and maintain upstream access.			
Water environment	5	Improve the quality and quantity of the water in the rivers.	+		
	6	Do not inhibit achievement of the WFD objectives and contribute to their achievement where possible.			
Historic environment	7	Preserve and where possible enhance important historic and cultural assets in the Borough.	+	The Strategy objectives have a generally positive impact on this SEA objective as the Strategy aims to reduce risk of flooding to the Borough, and L5 in particular aims to enhance the cultural heritage of the Borough. A reduction in risk of flooding within the Borough generally will reduce the risk of flooding to important historic and cultural assets, now and in the future. There are no Strategy objectives that specifically aim to protect and enhance historical and cultural assets, which lessens the positive impact on this SEA objective, and therefore an overall minor positive effect has been identified. However, any FRM measure that is likely to impact on a historic or cultural asset should be fully assessed, as some assets may require waterlogged conditions for protection. Any development proposed should also be assessed individually as the development itself could affect the fabric or setting of a known or unknown historic asset.	The effects of the Strategy are likely to occur over a range of timescales. However, the Strategy seeks to deliver long-term flood risk benefits and so any historic assets protected may benefit in the longer term. The permanence of any effects will depend upon the specific details of the FRM measure being implemented and the nature, scale and location of this intervention.
Population	8	Minimise the risk of flooding to communities.	++	The Strategy is likely to provide a significant positive effect in relation to this SEA objective. The majority of objectives seek to deliver improved FRM for local people, with objective N3 perhaps the objective most focused on achieving this. Improving FRM and reducing flood risk across the Borough could deliver a range of benefits to the local community including alleviating the cost and disruption associated with flooding, whilst reducing stress and anxiety associated with the risk of flooding. In addition, wider societal benefits could be achieved by reducing flood risk and improving the environmental quality of the Borough. Benefits could include reduced social deprivation and greater community cohesion. Objectives G1 to G7 in particular will deliver community benefits, although it is not clear at this stage the scale to which FRM actions will contribute to this.	Most of the Strategy objectives directly seek to reduce flood risk and therefore it is very likely that positive effects will occur. Given the range of objectives, it is also likely that effects will occur over a range of timescales and will include both temporary and permanent effects.
	9	Increase the use of sustainable drainage systems (SuDS), particularly in all new developments.	+	Although not specifically addressed within the Strategy objectives, SuDS is likely to play an important role in achieving a number of the objectives to reduce flood risk, promote better land management and influence the quality of new development.	SuDS may play a role in the delivery of a number of the Strategy objectives, particularly in relation to influencing the design and new development, and therefore it is likely that the Strategy will contribute towards achieving this SEA objective. The timescale for achieving this is likely to vary depending upon the scale of development proposals and the resources available to deliver the Strategy actions. The effects are likely to be permanent if SuDS schemes can be successfully incorporated into these new development proposals.
Material assets	10	Minimise the impacts of flooding to the Borough's transport network.	++	The Strategy objectives are likely to have a significant positive effect on this SEA objective as many of the Strategy objectives are aimed at reducing the risk of flooding to people and property, particularly the Strategy objective N3. Implementing FRM measures will reduce the risk of flooding to the Borough, which will include a reduction in the risk of flooding to the Borough's transport networks.	The Strategy includes a number of objectives to reduce flood risk and therefore it is very likely that the positive effects will occur. Given the range of relevant Strategy objectives, it is likely that effects will occur over a range of timescales.
Climate	11	Reduce vulnerability to climate change impacts and promote measures to enable adaptation to climate change impacts.	+	FRM measures that are introduced as a result of this Strategy will consider climate change in their design, providing a positive effect on this SEA objective. However, measures to enable adaptation to climate change could be more expressly promoted within the Strategy. Therefore the Strategy only has a minor positive effect on this SEA objective.	The nature of the effects will be influenced by a wide range of factors outside the direct control of the Strategy. Therefore it is difficult to predict at this stage the likely timescale, probability or permanence of effects. It is likely that effects will be achieved over a variety of timescales and their significance will be linked to the scale and nature at which climate change occurs. However, the Strategy will promote better FRM and will reduce flood risk across the Borough and there are significant drivers requiring climate change considerations to be built into these FRM actions. Therefore it is likely that the Strategy will provide an important means for monitoring the flood risk effects of climate change and implementing actions to address these effects.

Table 5-4: Assessment of The Strategy actions against SEA objectives

Action ID	Action name	The Strategy actions	SEA objectives											Comments
			1	2	3	4	5	6	7	8	9	10	11	
1	GR-1	Work across the council with partners and stakeholders to seek and influence opportunities to incorporate Flood Risk Management measures within existing and proposed works (e.g. works to the public realm, parks and open spaces).	0	0	0	0	0	0	0	+	+	+	0	Incorporating FRM measures into other areas such as parks and open spaces is likely to be through the implementation of SuDS, and therefore there is a positive effect on objective 9. As this action is across the Borough area, it is at a strategic scale. This means that there is also a positive impact on SEA objectives 8 and 10 because introduction of FRM measures will reduce flood risk within the Borough. Implementing FRM measures into parks and open spaces provides the potential to create new, or enhance existing, habitats (objectives 2 to 4). However, these objectives have been scored neutral as the FRM measures that could be introduced are unknown and therefore cannot be assessed for their impact on the environment.
2	GR-2	Seek opportunities to manage surface water run off locally and individually i.e. • Intercepting roof runoff into, water butts, back gardens • Rainwater harvesting • Green roofs • Front gardens using permeable paving • Replace footways with permeable materials • Depave impervious surfaces.	0	0	0	0	0	0	0	+	++	+	+	This action will promote the use of storage and other SuDS schemes and so could make an important contribution to achieving SEA objective 9. The use of such techniques may deliver a range of other benefits in terms of landscape and biodiversity value, improving water quality and achieving amenity benefits depending upon how and where such actions are implemented. Conversely, inappropriate development in sensitive areas could have a range of adverse effects. This action may also promote other forms of FRM activity including hard defence structures which could also lead to a range of adverse effects if delivered in an inappropriate manner. At this strategic level it is not clear how this actions will be delivered and so the action has been scored as neutral against the SEA objectives relating to the natural environment.
3	GR-3	Borough wide study to improve and formalise understanding of areas at risk of groundwater flooding identify physical triggers to enable a flood warning system to be set up and implemented across the areas at risk of GW.	0	0	0	0	0	0	+	+	0	+	+	These actions will improve understanding of groundwater flood risk and this information will ultimately be used to inform FRM activities that are likely to benefit people and property. Potential effects on other SEA objectives relating to natural environment features are not clear at this stage.
4	GR-4	Borough wide review of existing groundwater monitoring sites (boreholes) in relation to areas at risk within Royal Greenwich. Consider locations of additional sites. Ongoing Review telemetry arrangements at existing and proposed sites.	0	0	0	0	0	0	0	+	0	+	+	
5	GR-5	Review residual risk of culvert blockage throughout ordinary watercourses within the Royal Borough. Look at options to include surface water systems / catchments in study area.	0	0	0	0	0	0	0	+	0	+	+	Reviewing the risk of culvert blocking will help to reduce flood risk in the Borough by informing flood risk management measures that may be implemented in the Borough, and thus have a positive impact on SEA objectives 9 and 11. All other SEA objectives have a neutral impact because the review only includes flood risk. There is an opportunity for the review of culverts to include options to naturalise the culvert area (objective 6) when implementing flood management techniques.
6	GR-6	Increase understanding of ordinary water courses within Royal Greenwich, their status in terms of Water Framework Directive (WFD) requirements and in general, their roughness characteristics, a visual record of their condition, understanding of what assets affect and influence the watercourses.	0	0	0	0	0	0	0	+	0	+	+	These actions are focused on improving understanding of local flood risk and developing measures to reduce this risk. They will have fairly localised effects but will primarily contribute to SEA objectives 8, 10 and 11 focused on people and property. In relation to other SEA objectives, the effects at a strategic scale are likely to be neutral as no information is provided regarding the type or scale of any associated FRM interventions that might occur. However, such actions could have a range of effects on the natural environment, both positive and negative, depending upon the activities they deliver, and they should be subject to thorough environmental assessment at a project stage to ensure they are sustainable and are delivered in accordance with the wider objectives of the Strategy.
7	GR-7	Undertake Flood Investigations in line with policy set out within South East London Local Flood Risk Management Strategy.	0	0	0	0	0	0	0	+	0	+	+	
8	GR-8	Produce asset register of structures or features which, in accordance with S21 FWMA, are likely to have a significant effect on a flood risk within the Borough. Register to be reviewed annually and maintained as required. Long term objective to integrate asset register into existing asset systems.	0	0	0	0	0	0	0	+	0	+	+	
9	GR-9	Continue to support and attend Flood Partnership meetings with Internal and External parties regularly.	0	0	0	0	0	0	0	+	0	+	+	
10	GR-10	Review opportunities linked to proposed development to ensure betterment of flood risk and surface water management. Consider opportunities to reduce risk through re-development.	0	0	0	0	0	0	0	+	+	+	+	
11	GR-11	Promote de-pave opportunities, water resource management and runoff management (especially from Parks and Open Spaces).	0	0	0	0	0	0	0	+	+	+	+	
12	GR-12	Promote benefits of green infrastructure such as green roofs to community and developers and promote incorporation and management of green assets within development and re-development. Highlight links to All London Green Grid, Capital Ring and Greener Greenwich.	0	0	0	0	0	0	0	+	+	+	+	
13	GR-13	Actively encourage SuDS for development and retrofit. Work in partnership with developers to maximise the uptake and introduction of SuDS.	0	0	0	0	0	0	0	+	+	+	+	
14	GR-14	Seek and apply for funding for flood risk management and surface water management works from a variety of sources including Partnership Funding.	0	0	0	0	0	0	0	+	0	+	+	
15	GR-15	Produce Developers guidance setting out council expectations for design and for planning applications highlighting where key documents are and key figures expected to be seen by RBG to ensure consistency through the Borough.	0	0	0	0	0	0	0	+	0	+	+	
16	GR-16	Produce resident's guidance giving useful design tips to residents when undertaking DIY projects in and around their properties. Expanding the guidance to water efficiency and waste disposal including misconnections.	0	0	0	0	0	0	0	+	0	+	+	
17	GR-17	Where identified and appropriate introduce residential support schemes to promote benefits and value of green infrastructure to community. Provide green roof training, de-pave workshops, rain garden construction workshops for residents to encourage greater water management increase resilience, skill and knowledge base within borough and start to build green economy jobs.	0	+	+	0	0	0	0	+	+	+	+	
18	GR-18	Review Preliminary Flood Risk Assessment (PFRA) in line with Flood Risk Regulations.	0	0	0	0	0	0	0	+	0	+	+	
19	GR-19	Review Flood Hazard Mapping in line with Flood Risk Regulations.	0	0	0	0	0	0	0	+	0	+	+	
20	GR-20	Review and Monitor Surface Water Management Plan (SWMP) to ensure it is current and reflects the needs of the Borough.	0	0	0	0	0	0	0	+	0	+	+	
21	GR-21	Implement Sustainable Drainage Approval Body process in accordance with enactment of Schedule 3 of the Flood and Water Management Act 2010.	0	0	0	0	0	0	0	+	0	+	+	

Action ID	Action name	The Strategy actions	SEA objectives											Comments
			1	2	3	4	5	6	7	8	9	10	11	
22	GR-22	Develop stronger partnerships with residents to engage with communities and individuals to highlight the real risks of flooding and highlight solutions.	0	0	0	0	0	0	0	+	0	+	+	
23	GR-23	Develop stronger partnerships with Business to engage with business community to highlight the real risks of flooding. Highlight to business that there are simple cost effective solutions available also use the business resident relationship to for mutual benefit to raise awareness of flood risk and resilience.	0	0	0	0	0	0	0	+	0	+	+	
24	GR-24	Develop stronger partnerships internally to ensure there is a consistent message across the Borough from all departments also develop strong links for resilience and support of both Residents and businesses.	0	0	0	0	0	0	0	+	0	+	+	
25	GR-25	Develop strong partnerships with third party contractors/suppliers to ensure they are aware of the risks in the Royal Borough and to themselves and are able to respond and where possible negate, mitigate and support works, events and communications.	0	0	0	0	0	0	0	+	0	+	+	
26	GR-26	Develop strong partnerships with External Partners to ensure relationships with key stakeholders such as EA, TWUL to find ways of working which produce mutual benefits.	0	0	0	0	0	0	0	+	0	+	+	
27	GR-27	Develop strong partnerships, both within South East London Flood Partnership and with other professional partners.	0	0	0	0	0	0	0	+	0	+	+	
28	GR-28	Modelling indicates ponding against Westhorne Avenue / South Circular Road affecting properties, allotments and Cray Valley/ Badgers Sports ground (off Middle Park Avenue), following course of Quaggy at location of fluvial flooding to properties in December 2013 due to blockage of trash screen. Highlight to Environment Agency the need to improve understanding of risk at this location and review trash screen design and maintenance.	0	0	0	0	0	0	0	+	0	+	+	
29	GR-29	Review understanding of water movement (flow paths) under /over the South Circular around Alnwick Road, blockage potential and consequences. Consider Interventions.	0	0	0	0	0	0	0	+	0	+	+	
30	GR-30	Review risk identified in CDA 010 (Meadowcourt Road / Eltham Road). Modelling shows ponding along Eltham Road (A20). Consider Interventions.	0	0	0	0	0	0	0	+	0	+	+	
31	GR-31	Review potential for flood storage options in Queenscroft Recreation Ground to reduce runoff in Queenscroft Road and Kingsground.	0	0	0	0	0	0	0	+	0	+	+	
32	GR-32	Undertake site visit to better understand where water flows at times of flooding. Modelling shows a clear flow path from Ravensworth Road, across Wynford Way Recreation Ground and Coldharbour Lane Sports Centre, and over A20 to Fairy Hill Recreation Ground / Crossmead and on to the Tarn Bird Sanctuary. Better understand the volume and water quality of flows into, and out of the Tarn during a flood event. Consider possible Interventions. Consider Interventions (Eltham South Ward).	0	0	0	0	0	0	0	+	0	+	+	
33	GR-33	A flow route is highlighted along William Barefoot Drive onto Witherstone Way - review opportunities to direct onto 'The Course' and Altash Gardens open space for possible attenuation.	0	0	0	0	0	0	0	+	0	+	+	
34	GR-34	Undertake site visit to review flow paths linking the River Shuttle (e.g. across Avery Hill Park). Consider Interventions.	0	0	0	0	0	0	0	+	0	+	+	
35	GR-35	Identify opportunities to manage runoff from open spaces - Review highways runoff to / from Oxley Woods, Shooters Hill Golf course.	0	0	0	0	0	0	0	+	0	+	+	
36	GR-36	Identify opportunities to manage runoff from open spaces - Review potential for Flood Alleviation Scheme around Willow Dene School Woodland and neighbouring recreation ground.	0	0	0	0	0	0	0	+	0	+	+	
37	GR-37	Undertake site visit to better understand where water flows at times of flooding. Modelling shows a clear flow path down Donaldson Road and Herbert Road. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
38	GR-38	Modelling shows a flow path from Shrewsbury Park, down Erindale and onto Plumstead Common (the Slade). Review flood history and drainage network. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
39	GR-39	Promote onsite water management & awareness of contaminated land issues.	0	0	0	0	+	0	0	+	0	+	+	
40	GR-40	Undertake site visit to better understand where water flows at times of flooding, and to inspect existing drainage arrangements. Modelling shows a flow path down Eastmoor Street and Westfield Street. Consider Interventions.	0	0	0	0	0	0	0	+	0	+	+	
41	GR-41	Review potential for further surface water management measures at Charlotte Turner Gardens / Cutty Sark Gardens.	0	0	0	0	0	0	0	+	0	+	+	
42	GR-42	Continue to keep Environment Agency plans for Sutcliffe Park under review.	0	0	0	0	0	0	0	+	0	+	+	
43	GR-43	Modelling shows a flow path from Eltham North Ward has potential to cause ponding around Well Hall Pleasaunce and onto A2 / A205. Review flood history and drainage network. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
44	GR-44	Additional surface water flow from Kidbrooke with Hornfair Ward potentially resulting in ponding around Wendover Road, and along Eltham Green Road to meet the Quaggy River. Review trash screen maintenance and design along Kid Brook at Old Post Office Lane.	0	0	0	0	0	0	0	+	0	+	+	
45	GR-45	Modelling shows ponding around Westbrook Road and Kidbrook Gardens. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
46	GR-46	Undertake site visit to understand where water flows at times of flooding. Modelling shows a flow path along Broad Walk, across green and onto Langbrook Road and Sladebrook and Shirebrook Road to pond around Bournebrook Road, Wendover Road and Rochester Way (into Eltham West Ward). Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
47	GR-47	Modelling shows flow path along Merriman Road, across recreation ground and ponding against A2 at Eastbrook Road. Review flood history and drainage network. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
48	GR-48	Modelling shows ponding and flow paths along A2. Review flooding history and existing drainage arrangements. Consider	0	0	0	0	0	0	0	+	0	+	+	

Action ID	Action name	The Strategy actions	SEA objectives											Comments
			1	2	3	4	5	6	7	8	9	10	11	
		possible Interventions.												
49	GR-49	Modelling show runoff from Jackwood (Shooters Hill Ward) affecting a number of streets in north east Eltham and flowing along Rochester Way and Earlshall Road and into Eltham West Ward. Undertake site visit to better understand where water flows at times of flooding and review flood history and drainage network. Identify opportunities to manage runoff from open spaces (Jackwood) and consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
50	GR-50	Undertake site visit to better understand where water flows at times of flooding. Modelling shows a flow path along from Highcombe and Tallis Grove down Wyndcliff Road and ponding around Sandtoft Road. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
51	GR-51	Review opportunities within Maryon Wilson Park and Maryon Park for possible surface water alleviation and mitigation projects.	0	0	0	0	0	0	0	+	0	+	+	
52	GR-52	Modelling shows flow path from Charlton Park to Valley Grove and ponding around The Valley (FC ground) and Harvey Gardens. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
53	GR-53	Undertake site visit to better understand where water flows at times of flooding. Modelling shows a flow path along Elliscombe Road, Wellington Gardens, Priolo Road and ponding around Sundorne Road and Delafield Road. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
54	GR-54	Undertake site visit to better understand where water flows at times of flooding. Modelling shows flow path from Shooters Hill Ward (Red Lion Lane and Herbert Road) down between Nightingale Avenue and Eglinton Road, along Brook Hill Road and ponding around Wilmount Street and New Road. Review flood history and drainage network. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
55	GR-55	Undertake site visit to better understand where water flows at times of flooding. Modelling shows flow route and ponding around Waterdale Road. Work with Environment Agency to consider interventions and opportunities for mitigation and silt trap in Recreation Ground off Bostall Woods (rear of Woodbrook Road).	0	0	0	0	0	0	0	+	0	+	+	
56	GR-56	Review potential for incorporating flood storage areas into Plumstead Common / Plumstead Gardens ponds, and Woolwich Cemetery.	0	0	0	0	0	0	0	+	0	+	+	
57	GR-57	Modelling shows ponding around White Hart Road and Reidhaven Road from flow path emanating in Glyndon Ward. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
58	GR-58	Monitor and review status of EA pumping station study.	0	0	0	0	0	0	0	+	0	+	+	
59	GR-59	Undertake site visit to better understand where water flows at times of flooding. Modelling shows flow path along the Slade from Shooters Hill Ward (see Erindale) and flowing from the park along Roydene Road toward Plumstead High Street and ponding around White Hart Road (See Plumstead Ward). The Slade is a dry valley lined with scrub heathland vegetation, sloping down steeply from the level of Plumstead Common to the flood plain of the Thames. Review options for attenuation within the Slade and surrounds. There are large ponds towards the lower end. See Walk over report 'CDA Group 6_011 Plumstead'.	0	0	0	0	0	0	0	+	0	+	+	
60	GR-60	Modelling shows secondary surface water flow route from Plumstead Common between Bramblebury Road and Vicarage Park and along Durham Rise and Villas Road ponding at railway line. Review flood history and drainage network. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
61	GR-61	Participate and support Thamesmead Marshes and Dykes project (T21, WFD).	0	0	0	0	0	0	0	+	0	+	+	
62	GR-62	Modelling shows surface water flow path along Foxglove Path. Review flood history and drainage network. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
63	GR-63	Modelling shows flow path along Eynsham Drive. Review flood history and drainage network. Consider possible Interventions.	0	0	0	0	0	0	0	+	0	+	+	
64	GR-64	Influence where possible planned maintenance of Bostall Woods to manage surface water runoff.	0	0	0	0	0	0	0	+	+	+	+	
65	GR-65	Discuss TWUL high records of internal property flooding from sewers (as recorded on their DG5 register). Review opportunities for partnership working as appropriate.	0	0	0	0	0	0	0	+	0	+	+	
66	GR-66	Modelling shows ponding against railway line - review flow paths across railway line and records of flooding in this location to better understand risk. Consider links to Abbey Wood Road Park. Review alleviation options if required.	0	0	0	0	0	0	0	+	0	+	+	

Table 5-5: Summary of impacts of The Strategy actions on SEA objectives

Receptor	SEA Objective		Summary of impacts	Mitigation requirement
Landscape	**1**	Protect the integrity of the Borough's urban and rural landscapes, and do not cause an adverse impact on the Borough's important views and landmarks.	The majority of the Strategy actions are focused upon undertaking investigations into local flood risk issues and developing appropriate solutions. Given the local scale of the investigations and lack of information at this stage regarding the type or scale of FRM interventions that might take place, these actions have been scored as neutral for most of the SEA objectives, and in particular those associated with the natural environment. However, these actions could have a range of environmental effects, both positive and negative, depending upon the activities they deliver, and they should be subject to thorough environmental assessment at a project stage to ensure they are sustainable and are delivered in accordance with the wider objectives of the Strategy. It is particularly important that any potential effects are considered cumulatively across the programme of the Strategy actions as the strategy proposes a large number of actions which together could combine to cause significant effects, particularly if a series of actions affect an individual or connected group of environmental features.	There is a general lack of information at this stage to identify the types of effects that are likely to occur. Therefore it is not possible to make a judgement as to the timescale over which they might occur or their likely probability or permanence. It is reasonable to assume that any environmental effects might occur over a range of timescales and will comprise both temporary and permanent effects. It is important that individual actions are assessed at the project stage to determine their potential environmental impacts and that due regard is made to the Strategy objectives that seek to protect and enhance the environment.
Biodiversity, flora and fauna	**2**	Protect and enhance important and notable habitats and species in the Borough.		
	3	Maintain and enhance habitat connectivity and wildlife corridors within the Borough.		
	4	Maintain existing, and where possible create new, riverine habitat to benefit aquatic species and fisheries, and maintain upstream access.		
Water environment	**5**	Improve the quality and quantity of the water in the rivers.		
	6	Do not inhibit the achievement of the WFD objectives and contribute to their achievement where possible.		
Historic environment	**7**	Preserve and where possible enhance important historic and cultural assets in the Borough.		
Population	**8**	Minimise the risk of flooding to communities.	The Strategy actions seek to further the understanding of local flood risk and provide a mechanism through which appropriate solutions can be developed. These actions are primarily focused on delivering benefits to people and property and each has the potential to contribute positively to these SEA objectives. At this stage there is a general lack of information regarding how these actions may be delivered and what effects they might have, and therefore it is difficult to determine the scale or significance of any environmental benefits that might be achieved. Further assessment is required for each action as it is delivered so that the environmental effects, both positive and negative, in relation to the receptors encompassed by these SEA objectives, can be identified.	
	9	Increase the use of SuDS, particularly in all new developments.		
Material assets	**10**	Minimise the impacts of flooding to the Borough's transport network.		
Climate	**11**	Reduce vulnerability to climate change impacts and promote measures to enable adaptation to climate change impacts.		

6 Conclusion and recommendations

6.1 Conclusions

The Strategy aims to promote objectives and actions that seek to enable a more detailed understanding of flood risk within the Borough, whilst providing a mechanism through which appropriate FRM activities can be delivered. It is an important tool to protect vulnerable communities and help deliver sustainable regeneration and growth.

This SEA has been undertaken to identify the likely significant environmental effects of implementation of the Strategy. A proportionate approach was adopted towards establishing the scope of the SEA, reflecting the high-level nature of the Strategy.

A range of different strategy options for delivering the Strategy have been assessed at a strategic level against the SEA objectives. These alternatives include the 'do nothing' scenario, where no action is taken and existing assets and ordinary watercourses are abandoned, and the 'maintain current flood risk' scenario, where existing assets and watercourses are maintained as present in line with current levels of flood risk.

The assessment indicates that the 'do nothing' approach is likely to result in a number of significant adverse effects, particularly due to increased flood risk to people and property, and effects on other environmental assets including water quality, historic assets and biodiversity, where increased flooding may create new pathways for the spread of invasive non-native species. These impacts would be likely to increase over time as responsible bodies will be unable to incorporate precautionary measures in existing or new developments in a response to climate change pressures. Conversely, increased flood risk may result in greater connectivity between watercourses and their floodplains, offering opportunities for habitat creation/enhancement of benefit to a range of protected and notable species.

The option to 'maintain current flood risk' is likely to result in little or no additional impact on the environment in the short to medium term as the existing FRM regime continues to maintain existing levels of flood protection. However, in the future, as a result of climate change, flood risk will increase, resulting in many of the impacts identified under the 'do nothing' scenario, although potentially to a lesser extent and significance.

Therefore, the SEA identifies that implementation of the Strategy to 'understand and manage flood risk from localised sources' is the only realistic approach to be employed by the London Borough of Bromley as it has the potential to provide a range of environmental benefits and offers a pro-active approach to managing flood risk.

6.1.1 The Strategy objectives

Assessment of the Strategy objectives against the SEA objectives has been undertaken (see Table 5-2). No negative environmental effects have been identified. Many of the proposed Strategy objectives have the potential for both direct and indirect environmental benefits. The Strategy objective L2 in particular has potential to provide a positive contribution to all of the SEA objectives and make a significant positive contribution to many of them, as they seek to encourage design and development that not only reduces flood risk but also seeks to improve environmental quality. In particular, the Strategy could achieve a range of biodiversity benefits, including new habitat creation, enhancement of existing habitats and greater habitat connectivity. Assessment of the Strategy objective N2 against the SEA objectives has highlighted a risk in avoiding inappropriate development in areas of flood and coastal risk, which could lead to increased development pressure on Green Belt land. This risk is likely to be mitigated due to existing planning laws and protection of Green Belt land.

In addition, as expected of a strategy for managing flood risk, the majority of objectives within the strategy will contribute to achievement of the SEA objectives that seek to reduce flood risk to people, property and infrastructure. As a result, the Strategy is likely to have a significant positive effect on reducing flood risk to local communities.

Some of the Strategy objectives, in particular N1 and N2, are also likely to assist with climate change adaptation. In particular, measures that reduce flood risk, promote better use of water resources,

seek to deliver new habitat creation and better connection between existing habitats (such as de-culverting), could make a significant positive contribution to achievement of SEA objective 11.

At present, the potential effects associated with several of the Strategy measures are neutral. The Strategy objectives G1, G2, G4, G5 and G7) are largely neutral as they are social objectives rather than environmental objectives. There is a potential that to achieve these Strategy objectives it may result in physical interventions that could affect achievement of several of the SEA objectives, depending upon how they are implemented. These risks are directly associated with the type and scale of development or measures to achieve the social objectives, and their location in relation to important or sensitive environmental features. However, given that the Strategy includes objectives (particularly objective L2) to deliver a range of environmental improvements, such interventions, if delivered in an inappropriate manner, would be likely to conflict with delivery of the Strategy. Therefore, the Strategy should ensure integration of its objectives across all underpinning actions so that delivery of individual measures does not conflict with achievement of the wider strategy objectives, but instead seeks to contribute towards these objectives at all stages of the strategy's implementation. Achievement of reducing flood risk can also help to achieve the Strategy's social objectives as it would alleviate the cost and disruption associated with flooding, while also reducing the stress and anxiety associated with the risk of flooding.

A detailed assessment of the potential cumulative effects of the Strategy measures should be undertaken when further details regarding specific project level measures and their implementation are known.

6.1.2 The Strategy actions

Assessment of the Strategy actions against the SEA objectives was undertaken (

Table 5-4). No negative environmental effects have been identified, with the majority having a neutral effect.

Many of the Strategy actions have a neutral effect as they are reviews and research actions focused on improving understanding of local flood risk rather than implementation of FRM measures. They will generally have fairly local effects, but primarily contribute towards the SEA objectives that aim to reduce flood risk within the Borough. Actions to reduce flood risk could have a range of effects on the natural environment, and have the potential for indirect environmental benefits. The Strategy actions that include green spaces such as natural areas (action 64), open spaces and road verges have the potential to provide a positive contribution to the SEA objectives concerned with biodiversity.

In addition, as expected of a strategy for managing flood risk, the majority of actions within the strategy will contribute to achievement of the SEA objectives that seek to reduce flood risk to people, property and infrastructure. As a result, the Strategy is likely to have a significant positive effect on reducing flood risk to local communities.

The increased understanding of flood risk that many of the Strategy actions will provide will contribute towards SEA objective 11 by increasing understanding of the effects of climate change. This increased understanding has the potential to lead to development and implementation of management measures that will reduce vulnerability to climate change.

The physical interventions that could come as a result of the Strategy actions could affect the achievement of the SEA objectives, depending on how the actual FRM measures are implemented. These risks are directly associated with the type and scale of the FRM and their location in relation to environmental features. Therefore the Strategy should ensure that delivery of these measures does not adversely affect the achievement of the SEA objectives. These physical interventions should be subject to a thorough environmental assessment at the project stage to ensure they are sustainable and are delivered in accordance with the Strategy objectives.

6.2 Recommendations

The assessment of the Strategy objectives and actions has identified a number of areas where the Strategy could be strengthened to ensure delivery of a sustainable approach. These areas are associated with social aspects within the Borough, and not directly aiming to implement FRM measures. Specifically, these apply to the following Strategy objectives/measures:

- Objective G1 – *Support / deliver sustainable growth of the economy, make the area a nice place to work and do business.*
- Objective G2 – *Help to support a better quality of life for resident and visitors.*
- Objective G3 – *Contribute to building safer communities.*
- Objective G4 – *Provide quality clean and green spaces for the public to enjoy and make use of.*
- Objective G5 – *Support more active amenity within public spaces to improve health in the community.*
- Objective G6 – *Improve community understanding of local flood risk so they can take action to reduce the risk to themselves and their property.*
- Objective G7 – *Promote social inclusion and tackle deprivation and discrimination.*

Although many of these objectives have a positive effect on SEA objectives 8 and 10 to minimise the risk of flooding to the Borough, there are neutral effects on the other SEA objectives. Therefore, while achieving these the Strategy objectives there is an opportunity for the Strategy to implement FRM measures that also consider the SEA objectives as a whole, and therefore produce a sustainable FRM programme which enhances biodiversity, historic assets and landscape.

In order to ensure that the Strategy does not result in adverse effects, all strategy objectives should be integrated so that delivery of individual actions does not conflict with achievement of the wider strategy objectives. In addition, development and implementation of these actions should be effectively managed by ensuring that, where necessary, proposals are assessed to determine their potential environmental effects (positive and negative) in advance of their implementation and that appropriate mitigation measures are built into their delivery as required.

In addition, several of the Strategy objectives have the potential to deliver significant environmental benefits. These are:

- Objective N2 – *Development Control: Avoiding inappropriate development in areas of flood and coastal erosion risk and being careful to manage land elsewhere to avoid increasing risks.*
- Objective N3 – *Reducing Risk: Maintaining and improving FCERM systems to reduce the likelihood of harm to people and damage to the economy, environment and society.*
- Objective L2 – *Encourage flood management activities by private owners (riparian owners) and flood defence structures to take action to reduce the risk to themselves, their property, and others.*
- Objective L5 – *Encourage design and development that augments and enhances the cultural heritage of the Borough.*

The Strategy should seek to maximise the potential environmental benefits associated with delivery of these objectives and actions. This can be best achieved through the integration of the Strategy objectives and through close partnership working, so that appropriate resources and funding are effectively allocated.

6.3 Monitoring

The SEA Regulations require the Royal Borough of Greenwich to monitor the significant environmental effects (positive and negative) upon the implementation of the Strategy. Key potential environmental effects that require monitoring are listed in Table 6-1. Several of these monitoring requirements are likely to require a partnership approach to effectively track the effects of the strategy. Possible partners for monitoring responsibility are therefore highlighted.

The monitoring indicators will enable the Strategy to be monitored and any problems or shortfalls to be highlighted and remedied at an early stage. If failings are evident, it will be necessary for the Strategy to be revised so that the achievement of the SEA objectives is not compromised. Of note, it is unlikely that any effects negative or otherwise will be seen immediately and that the relative time scale for monitoring will vary for each indicator/target.

Table 6-1: SEA monitoring framework

The Strategy objective	SEA objective(s)	Potential significant effects	Monitoring indicator	Possible monitoring and/or delivery partners
Objective N2 *Development Control: Avoiding inappropriate development in areas of flood and coastal erosion risk and being careful to manage land elsewhere to avoid increasing risks.*	8 and 11	Promoting better land management to avoid development in areas at risk of flooding, and as such, reducing flood risk to communities and reducing vulnerability to climate change.	Number of properties with reduced flood risk. Number of key services (e.g. hospitals, health centres, residential/care homes, schools etc.) at risk from flooding. Area of habitat created as a result of implementation of the Strategy (e.g. flood storage areas creating wetland habitat). Number of barriers to migration removed.	Greenwich Borough Council Thames Water Environment Agency
Objective N3 *Reducing Risk: Maintaining and improving FCERM systems to reduce the likelihood of harm to people and damage to the economy, environment and society.*	8 and 10	Improving FCERM systems with the objectives of reducing harm to people, economy, environment and society assists with the achievement of all the SEA objectives.	Number of properties with reduced flood risk. Number of the Borough's assets, including heritage and transport, with reduced flood risk.	Greenwich Borough Council Thames Water Environment Agency
Objective L4 *Encourage flood management activities by private owners (riparian owners) and flood defence structures to take action to reduce the risk to themselves, their property, and others.*	8	Individuals will be able to reduce flood risk, and therefore reduce flood risk across the Borough.	Number of properties with reduced flood risk.	Greenwich Borough Council Thames Water Environment Agency

The Strategy objective	SEA objective(s)	Potential significant effects	Monitoring indicator	Possible monitoring and/or delivery partners
Objective L5 *Encourage design and development that augments and enhances the cultural heritage of the Borough.*	7	Enhance the setting of cultural heritage in the Borough.	Number of historic assets at risk from flooding.	Greenwich Borough Council English Heritage
Action 2 *Seek opportunities to manage surface water run off locally and individually i.e.:* • *Intercepting roof runoff into, water butts, back gardens* • *Rainwater harvesting* • *Green roofs* • *Front gardens using permeable paving* • *Replace footways with permeable materials* • *De-pave impervious surfaces.*	9	Increase the number of SuDS within the Borough.	Number of sites with SuDS schemes installed.	Greenwich Borough Council Thames Water Environment Agency

6.4 Habitats Regulations Assessment

A Test of Likely Significant Effect (screening assessment) has been prepared in accordance with the requirements of the Habitats Regulations to determine whether the Strategy is likely to adversely affect the integrity of a European site (alone or in combination). This is summarised in Section **Error! Reference source not found.** and described in Appendix **Error! Reference source not found.**. The screening assessment concluded that the Strategy is not likely to have a significant effect on any of the European sites.

Consultation with Natural England on the outcomes of the screening assessment was undertaken as part of the SEA scoping consultation exercise. Natural England confirmed that the Strategy is not likely to have a significant effect on the European sites.

Following development of the draft strategy objectives and measures, the screening assessment was reviewed to determine whether the Strategy would be likely to have a significant effect on the European sites. It was agreed with Natural England that the Borough is of sufficient distance from these sites that no likely significant effect and an Appropriate Assessment is not required.

The outcomes of this revised screening assessment are documented in Appendix **Error! Reference source not found.** of this report. The screening assessment concludes that the Strategy is not likely to have a significant adverse effect on a European site.

Consultation with Natural England on the outcomes of this assessment will be undertaken as part of the consultation process outlined in Section 7.

7 Next steps

The next stage of the SEA process (Stage D) involves consulting upon the draft the Strategy and draft SEA Environmental Report with statutory consultees, stakeholders and the public, and then making any necessary amendments and updates to the documents. All consultation responses received will be reviewed and taken into consideration for the next stage of appraisal process. This will involve the preparation of a Statement of Environmental Particulars (SoEP), which will set out how the findings of the Environmental Report and the views expressed during the consultation period have been taken into account as the Strategy has been finalised and formally approved. The SoEP will also set out any additional monitoring requirements needed to track the significant environmental effects of the strategy.

7.1 Consultation

This Environmental Report will be subject to public consultation for 12 weeks alongside the draft the Royal Borough of Greenwich Council Strategy. All comments on the content of this Environmental Report should be sent to:

XXX

A Appendix A: Habitats Regulations Assessment

Test of Likely Significance

Record of Assessment of Likely Significant Effect on a European/International Site (SAC/SPA/Ramsar)

Part A: The Proposal

Table A-1: Assessment scope

Type or permission/activity	Local Flood Risk Management Strategy (The Strategy)
Project/File Ref. Number	Royal Borough of Greenwich
National Grid Reference (NGR)	TQ 391780
Brief Description of the project	The Strategy is a requirement under the Flood and Water Management Act (2010). The Act outlines the responsibility of the lead local flood authority to 'develop, maintain, apply and monitor' a strategy for local flood risk management. It notes that the strategy must identify or outline the following: • The risk management authorities in the area; • The flood and coastal erosion risk management functions that may be exercised by those authorities in relation to the area; • The objectives for managing local flood risk (including any objectives included in the authority's flood risk management plan prepared in accordance with the Flood Risk Regulations 2009; • The measures proposed to achieve those objectives; • How and when the measures are expected to be implemented; • The costs and benefits of those measures, and how they are to be paid for; • The assessment of local flood risk for the purpose of the strategy; • How and when the strategy is to be reviewed; and • How the strategy contributes to the achievement of wider environmental objectives.
European Site Name and Status	**Richmond Park Special Area of Conservation (SAC)**
Distance to European/International Site	16km
Site EU Reference Number	UK0030246
Site Centre NGR	TQ199728
List of Site Interest Features	Designated for Annex II species: stag beetle *Lucanus cervus* - site of national importance for the conservation of the fauna of invertebrates associated with the decaying timber of ancient trees.
European Site Name and Status	**Wimbledon Common Special Area of Conservation (SAC)**
Distance to European/International Site	13km
Site EU Reference Number	UK0030301
Site Centre NGR	TQ227719
List of Site Interest Features	Annex I habitats: North Atlantic wet heath with *Erica tetralix*; and European dry heaths Annex II species: stag beetle *Lucanus cervus*
European Site Name and Status	**Epping Forest Special Area of Conservation (SAC)**
Distance to European/International Site	9km
Site EU Reference Number	UK0012720
Site Centre NGR	TQ399959
List of Site Interest Features	Annex I habitats: Atlantic acidophilous beech forests with Ilex and sometimes also taxus in the shrub layer *Quercion robori-petraeae* or *Illici Fagenion*; North Atlantic wet heath with *Erica tetralix*; and European dry heaths. Annex II species: stag beetle *Lucanus cervus*
European Site Name and Status	**Lee Valley Special Protection Area (SPA)**
Distance to European/International Site	9km
Site EU Reference Number	UK9012111

Site Centre NGR	51 34 05 N / 00 02 58 W
List of Site Interest Features	Site supports populations of Bittern *Botaurus stellaris, (*representing at least 6.0% of the wintering population in Great Britain); Gadwall *Anas strepera (*representing at least 1.7% of the wintering Northwestern Europe population) and Shoveler *Anas clypeata (*representing at least 1.9% of the wintering Northwestern/Central Europe population).
European Site Name and Status	**Lee Valley Ramsar**
Distance to European/International Site	9km
Site EU Reference Number	UK11034
Site Centre NGR	51 34 51 N / 00 02 58 W
List of Site Interest Features	Site supports the nationally scarce plant species whorled water-milfoil Myriophyllum verticillatum and the rare or vulnerable invertebrate Micronecta minutissima (a water-boatman). Site supports populations of Northern shoveler *Anas clypeata* (representing an average of 1.9% of the GB population) and Gadwall *Anas strepera* (representing an average of 2.6% of the GB population).
European Site Name and Status	**Thames Estuary and Marshes Special Protection Area (SPA)**
Distance to European/International Site	20km
Site EU Reference Number	UK9012021
Site Centre NGR	51 29 08 N / 00 35 47 E
List of Site Interest Features	Site supports populations of Avocet *Recurvirostra avosetta*, *(*representing 21.7% of the wintering population in Great Britain); Hen Harrier *Circus cyaneus (*representing 0.9% of the wintering Great Britain population). The site also supports wintering and on passage Ringed Plover *Charadrius hiaticula.*
European Site Name and Status	**Thames Estuary and Marshes Ramsar**
Distance to European/International Site	20km
Site EU Reference Number	UK11069
Site Centre NGR	51 29 08 N / 00 35 47 E
List of Site Interest Features	Site supports one endangered plant species and at least 14 nationally scarce plants of wetland habitats. The site also supports more than 20 British Red Data Book invertebrates. Assemblages of (waterfowl) of international importance Ringed plover *Charadrius hiaticula* (representing an average of 1.8% of the GB population), Black-tailed godwit *Limosa limosa islandica* (representing an average of 4.6% of the population), Grey plover *Pluvialis squatarola* (representing an average of 3.1% of the GB population), Red knot *Calidris canutus islandica* (representing an average of 1.6% of the population), Dunlin *Calidris alpina alpina* (representing an average of 1.1% of the population) and Common redshank *Tringa totanus totanus* (representing an average of 1% of the GB population)
European Site Name and Status	**South West London Waterbodies Special Protection Area (SPA)**
Distance to European/International Site	32km
Site EU Reference Number	UK9012171
Site Centre NGR	51 27 41 N / 00 31 27 W
List of Site Interest Features	Site supports populations of Gadwall *Anas strepera (*representing at least 2.6% of the wintering Northwestern Europe population) and Shoveler *Anas clypeata (*representing at least 2.7% of the wintering Northwestern/Central Europe population).
European Site Name and Status	**South West London Waterbodies Ramsar**
Distance to European/International Site	32km
Site EU Reference Number	UK11065
Site Centre NGR	51 23 59 N / 00 23 26 E
List of Site Interest Features	Site supports populations of Gadwall *Anas strepera (*representing an average of 2.8% of the GB population) and Northern shoveler *Anas clypeata (*representing at least 2.6% of the GB population).
European Site Name and Status	**North Downs Woodlands Special Area of Conservation (SAC)**
Distance to European/International Site	24km
Site EU Reference Number	UK0030225
Site Centre NGR	TQ674629

List of Site Interest Features	Annex I habitats: mature *Asperulo-Fagetum* beech forests; and yew *Taxus baccata* woods of the British Isles. Annex II habitats: semi-natural dry grasslands and scrubland facies on calcareous substrates (important orchid sites).
Is this proposal directly connected with or necessary to the management of the site for nature conservation?	No

Part B: Activities:

Hazards and Effects in reference to the individual elements and consented activities of the project. Describe any hazards or effects with potential to give rise to impacts on the European Site (either alone or in combination with other plans or projects).		
Sensitive Interest Features	**Potential Hazard(s)**	**Potential Exposure to hazard and mechanism of effect/impact if known**
Wetland plant species Thames Estuary and Marshes Ramsar • Site supports one endangered plant species and at least 14 nationally scarce plants of wetland habitats.	None	The sites are located a significant distance from the boundary of the Royal Borough of Greenwich and are not hydrologically linked with the Borough. The Strategy seeks to implement flood risk management measures in the Borough and does not aim to influence flood risk or flood risk management activities at a wider regional level. Flood risk management activities introduced by the Strategy will therefore have a local impact and will not extend a significant distance beyond the boundary of the Borough. Therefore, no hazards will arise on the sensitive interest features as a result of implementation of the Strategy.
Aquatic invertebrate species Lee Valley Ramsar • Whorled water-milfoil *Myriophyllum verticillatum* • *Micronecta minutissima* Thames Estuary and Marshes Ramsar • The site supports more than 20 British Red Data Book invertebrates.	None	The sites are located a significant distance from the boundary of the Royal Borough of Greenwich and are not hydrologically linked with the Borough. The Strategy seeks to implement flood risk management measures in the Borough and does not aim to influence flood risk or flood risk management activities at a wider regional level. Flood risk management activities introduced by the Strategy will therefore have a local impact and will not extend a significant distance beyond the boundary of the Borough. Therefore, no hazards will arise on the sensitive interest features as a result of implementation of the Strategy.
Terrestrial habitats Wimbledon Common Special Area of Conservation (SAC) • North Atlantic wet heath with *Erica tetralix,* • European dry heaths Epping Forest Special Area of Conservation (SAC) • Atlantic acidophilous beech forests with Ilex and sometimes also taxus in the shrub layer *Quercion robori-petraeae* or *Illici Fagenion* • North Atlantic wet heath with *Erica tetralix* • European dry heaths North Downs Woodlands SAC • Mature *Asperulo-Fagetum* beech forests • Yew *Taxus baccata* woods of the British Isles • Semi-natural dry grasslands and scrubland facies on calcareous substrates (important orchid sites).	None	The SAC sites are located a significant distance from the boundary of the Royal Borough of Greenwich; are not hydrologically linked with the Borough; and are not designated for wetland /hydrological interest features. The Strategy seeks to implement flood risk management measures in the Borough and does not aim to influence flood risk or flood risk management activities at a wider regional level. Flood risk management activities introduced by the Strategy will therefore have a local impact and will not extend a significant distance beyond the boundary of the Borough. Therefore, no hazards will arise on the sensitive interest features as a result of implementation of the Strategy.

Terrestrial invertebrate species Richmond Park Special Area of Conservation (SAC) • Stag beetle *Lucanus cervus*; • Site of national importance for the conservation of the fauna of invertebrates associated with the decaying timber of ancient trees. Wimbledon Common Special Area of Conservation (SAC) • Stag beetle *Lucanus cervus*. Epping Forest Special Area of Conservation (SAC) • Stag beetle *Lucanus cervus*.	None	The SAC sites are located a significant distance from the boundary of the Royal Borough of Greenwich; are not hydrologically linked with the Borough; and are not designated for wetland /hydrological interest features. The Strategy seeks to implement flood risk management measures in the Borough and does not aim to influence flood risk or flood risk management activities at a wider regional level. Flood risk management activities introduced by the Strategy will therefore have a local impact and will not extend a significant distance beyond the boundary of the Borough. Therefore, no hazards will arise on the sensitive interest features as a result of implementation of the Strategy.
Wintering and migratory bird species Lee Valley Special Area of Protection (SPA) • Bittern *Botaurus stellaris* • Gadwall *Anas strepera* • Shoveler *Anas clypeata* Lee Valley Ramsar • Gadwall *Anas strepera* • Shoveler *Anas clypeata* Thames Estuary and Marshes Special Protection Area (SPA) • Avocet *Recurvirostra avosetta* • Hen Harrier *Circus cyaneus* • Ringed Plover *Charadrius hiaticula* Thames Estuary and Marshes Ramsar • Assemblages of (waterfowl) of international importance • Ringed plover *Charadrius hiaticula* • Black-tailed godwit *Limosa limosa islandica* • Grey plover *Pluvialis squatarola* • Red knot *Calidris canutus islandica* • Dunlin *Calidris alpina alpina* • Common redshank *Tringa totanus tetanus* South West London Waterbodies Special Protection Area (SPA) • Gadwall *Anas strepera* • Shoveler *Anas clypeata* South West London Waterbodies Ramsar • Gadwall *Anas strepera* • Shoveler *Anas clypeata*	None	The sites are located a significant distance from the boundary of the Royal Borough of Greenwich and are not hydrologically linked with the Borough. The Strategy seeks to implement flood risk management measures in the Borough and does not aim to influence flood risk or flood risk management activities at a wider regional level. Flood risk management activities introduced by the Strategy will therefore have a local impact and will not extend a significant distance beyond the boundary of the Borough. Therefore, no hazards will arise on the sensitive interest features as a result of implementation of the Strategy.

Part C: Assessment of Significance

In reference to the site interest features and their conservation objectives, describe any likely direct, indirect or secondary effects from the uncompleted and/or continuing consented activities of the project (either alone or in combination with other plans or projects) likely to give rise to significant effects on the European/Ramsar Site.	**None**
Is the project likely to have a significant effect 'alone'?	**No**
If there is no likely significant effect 'alone', are there other projects or plans that in-combination with the project being assessed could affect the site?	**No**
Is the project likely to have a significant effect 'in-combination'?	**No**
List of agencies consulted (Contact name and telephone/email address)	
NE Consultation response comments: **NE Signature:**	

7.1.1 References

http://jncc.defra.gov.uk

B Appendix B: Review of policies, plans and programmes

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
International				
EU Sustainable Development Strategy (revised 2006)	Outlines the need for economic growth to support social progress and respect the environment to achieve sustainable development.	The strategy aims to limit climate change and manage natural resources more responsibly, issues which are directly relevant to flood risk. Provides direction for the Strategy in the managing of natural resources for flood risk	The Strategy should seek to promote objectives that deliver sustainable FRM and sustainable development.	• Biodiversity, flora and fauna • Water environment
European Biodiversity Strategy to 2020	Outlines strategy to halt the loss of biodiversity and ecosystem services in the EU by 2020.	Aims include the provision of better protection for ecosystems and fish stocks, promotion of green infrastructure and tighter controls on invasive alien species.	The Strategy may contribute to the aims of the strategy through the provision of new green infrastructure to manage flood risk. In contrast, the strategy may limit certain FRM objectives if they are shown to be likely to adversely affect biodiversity or ecosystem services.	• Biodiversity, flora and fauna
EC Birds Directive – Council Directive 2009/147/EEC on the conservation of wild birds	Provides for protection of all naturally occurring wild bird species and their habitats, with particular protection of rare species.	Designates Special Protection Areas (SPAs) to protect birds and their habitats. The Strategy objectives should avoid any significant adverse effect on these sites and supporting features. Requires The Strategy to be assessed for potential impact.	May restrict certain FRM objectives if they are shown to be likely to have a significant effect on a SPA.	• Biodiversity, flora and fauna
EU Floods Directive – Directive 2007/60/EC on the assessment and management of flood risks	Aims to reduce and manage the risk of flooding and associated impacts on the environment, human health, heritage and economy. Principle requirement is the preparation of FRM plans at River Basin District level, together with preliminary flood risk assessments and hazard/risk maps.	Provides strategic direction to reduce impacts of flooding and promote enhanced FRM. The Strategy will need to demonstrate compliance with the requirements of the Directive.	None likely as the Strategy will seek to contribute to achieving the Directive.	• Water environment • Climate
EU Groundwater Directive – Directive 2006/118/EC on the protection of groundwater against pollution and deterioration	Establishes a regime that sets underground water quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater. Implemented in the UK through the Environmental Permitting Regulations (2010).	Water quality is relevant to the LFRM as flooding is linked to water pollution and a reduction in surface water and groundwater quality.	Improved FRM may benefit groundwater quality by reducing the risk of water pollution during a flood event. The Strategy objectives would need to consider potential impacts on groundwater and may be restricted if they contribute to an adverse impact.	• Water environment
EC Habitats Directive – Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora	Principle aim is to promote the maintenance of biodiversity by requiring Member States to take measures to restore habitats and species to favourable conservation status. Introduces robust protection for habitats and species of European importance. Enables the creation of Special Areas of Conservation (SACs) in order to establish a coherent ecological network of protected sites. Encourages protection and management of flora and fauna and supporting landscapes through planning and development policies.	Designates SACs to protect and promote biodiversity. The Strategy objectives should avoid any significant adverse effect on these sites and supporting features. Requires the Strategy to be assessed for potential impact.	May restrict certain FRM objectives if they are shown to be likely to have a significant effect on a SAC.	• Biodiversity, flora and fauna
Urban Wastewater Treatment Directive – Directive 91/271/EEC concerning urban	Aims to protect the environment from the adverse effects of urban waste water discharges and discharges from certain industrial sectors.	Defines requirements for the collection and treatment of waste water in line with the population equivalent. The Strategy would	The Strategy could support the aims of the Directive by reducing the risk of flooding to water treatment sites. However, the Strategy	• Water environment

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
waste water treatment		need to consider potential impact of FRM objectives on water treatment sites.	objectives may be restricted if they are shown to be likely to effect on wastewater discharges during flood events.	
EU Water Framework Directive – Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy	Establishes framework for protection of inland surface waters, transitional waters, coastal waters and groundwater to prevent pollution, promote sustainable water use, protect the aquatic environment, improve the status of aquatic ecosystems and mitigate the effects of floods and droughts.	Member states must prepare River Basin Management Plans and programme of measures for each River Basin District that sets out a timetable approach to achieving the WFD objectives. Places requirements on all relevant authorities to ensure their actions do not contravene the objectives of the Directive.	May restrict certain FRM options if likely to inhibit achievement of WFD objectives and detailed programme of measures. FRM options may be strengthened if they actively contribute to meeting the WFD requirements.	• Biodiversity, flora and fauna • Water environment
National				
Securing the Future – the UK Government Sustainable Development Strategy (2005)	Establishes a broad set of actions and priorities to support the achievement of sustainable development. It includes measures to enable and encourage behaviour change, measures to engage people, and ways in which the Government can promote sustainability.	Includes high level aims to promote sustainable development and sets out how local authorities can contribute to delivering this and the improvement of the local environment.	The Strategy can contribute to sustainable development through the promotion of better FRM to benefit people, the economy and the environment.	• Population • Material assets
Flood and Water Management Act (2010)	Designates Lead Local Flood Authorities (LLFAs) who *'must develop, maintain, apply and monitor a strategy for flood risk management in its area'.* Applies to ordinary watercourses, surface runoff and groundwater.	Provides key driver for production of the Strategy and sets strategic direction.	None	• Water environment • Climate
Flood Risk Regulations (2009)	Implements the requirements of the EU Floods Directive, which aims to manage the risk of flooding and associated socio-economic and environmental impacts. Requires LLFAs to manage flooding from surface runoff.	Key driver for implementing FRM strategies at the local level.	None	• Water environment • Climate
Water for People and the Environment, Water Resources Strategy for England and Wales (2009)	Sets out the approach to sustainable water resources management throughout England and Wales to 2050 and beyond to ensure that there will be sufficient water for people and the environment.	FRM measures are linked to wider water resources management issues and both aspects can actively contribute to achieving corresponding objectives.	None	• Water environment • Population • Climate
Future Water, The Government's water strategy for England (2008)	Future Water defines future objectives for the water sector by 2030 and implementation steps on achieving the objectives. It includes objectives to reduce flood risk from rivers and the coast; improve the sustainable delivery of water supplies; improve the quality of the water environment through greater protection; and more effective management of surface water , which includes the promotion of SuDS, water reuse and above-ground storage;	The strategy includes provisions that seek to better manage surface water drainage and reduce flood risk, and the Strategy could actively contribute to achieving these objectives.	The strategy promotes greater protection of the water environment, reduced water pollution and enhanced ecological quality of watercourses. The strategy may restrict certain FRM options if they are likely to inhibit achievement of these wider environmental objectives.	• Water environment
Making Space for Water – taking forward a new Government strategy for flood and coastal erosion risk management in England (2005)	Aims to provide strategic direction to deliver sufficient space for water and enable more effective management of coastal erosion and flooding to benefit both people and the economy. The aim being to address these issues to mitigate their impact and to achieve environmental and social benefits.	National guidance regarding FRM is directly relevant to the Strategy. The Strategy can contribute to its aims, including promoting greater land management and land use planning, and integrated urban drainage	None	• Water environment • Population • Climate

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
		management.		
The National Flood and Coastal Erosion Risk Management Strategy for England (2011)	Provides strategic direction to manage and monitor flood and coastal erosion risks in England. It sets out responsibilities of different organisations including local authorities to reduce risks and sets out the requirements for LLFAs to develop the Strategy.	Key driver for implementing FRM strategies at the local level.	None	• Water environment • Population • Climate
Water Act (2003)	Sets out the framework for abstraction licensing, impoundments, water quality standards and pollution control measures, and includes measures for drought management and flood defence work in England and Wales.	FRM is one of the themes addressed by the Strategy.	The strategy promotes greater protection of water resources and may restrict the Strategy objectives if they are likely to adversely affect water quality or sustainable resource management.	• Water environment
Draft Water Bill (2012)	Emerging national strategy aimed at improved regulation of the water industry, whilst increasing its resilience to natural hazards such as drought and floods. It includes provisions to better manage sustainable water abstraction and encourage the use of SuDS.	Aims to promote better management of water resources and reduce the risks of flooding.	The strategy promotes greater protection of water resources and may restrict the Strategy objectives if they are likely to adversely affect water quality or sustainable resource management.	• Water environment
The National Flood Emergency Framework for England (2011)	Sets out a strategic approach to emergency response planning to reduce the impacts of flooding and improve resilience.	The framework sets out organisational responsibilities and promotes a multi-agency approach to managing flooding events.	None	• Water environment
The Carbon Plan (2011)	The carbon plan sets out a vision for Britain powered by cleaner energy used more efficiently, with more secure energy supplies and stable energy prices and benefits from jobs and growth that a low carbon economy will bring. Key areas are electricity generation, eating homes and businesses and travel.	Carbon emissions, and the resulting climate change impacts, are highly relevant to the issue of FRM due to the likely increased flood risk resulting from climate change.	None	• Climate change
Building a Low Carbon Economy – the UK's Contribution to Tackling Climate Change (2008)	Puts forward a framework for adapting to climate change and associated threats as well as a case for increased resilience to climate change.	Emphasises the commitment to sustainable development and consideration of the potential impacts of climate change, including increased flooding.	The Strategy may contribute to the aims of the strategy through the provision of measures to adapt to an increase in flood risk due to future climate change.	• Climate change
Climate Change Act (2008)	Establishes a definite target to reduce UK national carbon emissions by 80% by 2050, relative to a 1990 baseline. Requires the government to publish five yearly carbon budgets starting with the period 2008-2012. Sets targets to reduce greenhouse gases, and puts in place funding and mechanisms to reduce and alter activities which contribute to the emission of these gasses.	Emphasises the commitment to sustainable development.	The Strategy will need to consider the carbon implications of its objectives and should seek to minimise emissions whilst promoting sustainable FRM.	• Climate change
Biodiversity 2020: A Strategy for England's Wildlife and Ecosystems (2011)	Sets out the Government's strategy for improving biodiversity in England up to 2020.	Flooding can have adverse impacts on biodiversity. However there may be opportunities for the Strategy to provide for biodiversity enhancements, as well as reducing risks to habitats and species from flood events.	The strategy could restrict the Strategy objectives if they are shown to have a significant adverse impact on water quality or local biodiversity.	• Biodiversity, flora and fauna • Water environment

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
England Biodiversity Framework (2008)	The framework encourages a number of conservation aspects including the adoption of an ecosystem approach and to embed climate change adaptation principles in conservation action.	The Strategy may include measures that would result in biodiversity enhancements across landscapes and restoring / improving habitats.	The strategy could restrict the Strategy objectives if they are shown to have a significant adverse impact on water quality or local biodiversity.	• Biodiversity, flora and fauna • Water environment
UK Biodiversity Action Plan (1994)	The UK BAP aims to maintain and enhance biological diversity within the UK and contribute to the conservation and enhancement of global diversity.	The Strategy will need to consider the potential impacts of measures within it on important species and habitats that are within the District, including the various Sites of Special Scientific Interest.	The strategy could restrict the Strategy objectives if they are shown to have a significant adverse impact on water quality or local biodiversity.	• Biodiversity, flora and fauna • Water environment
National Wetland Vision (2008)	The Wetland Vision is of a future where wetlands are a significant feature of the landscape in which wildlife can flourish. It will be a future in which wetland heritage is recognised and safeguarded; where everyone can enjoy wetlands for quiet recreation and tranquillity. Vitally, it will be a future where wetlands are valued both for the roles they play in helping us deal with some of the challenges of the 21st century and in improving and sustaining our quality of life.	Preserving and restoring wetlands such as peatlands, rivers and lakes will help regulate surface water run-off, store flood water and recharge groundwaters. These actions that are part of the wetland vision could potentially link with measures within the Strategy.	May restrict certain FRM objectives if they are shown to be likely to have a significant effect on wetland habitats within the Borough.	• Biodiversity, flora and fauna • Water environment
Wildlife and Countryside Act (as amended) (1981)	The Act is the principle mechanism for legislative protect of wildlife in Great Britain. The Act deals with the protection of birds, other animals and plants.	The Act provides for the notification of Sites of Special Scientific Interest and their protection and management. Any potential impacts of the Strategy, including on SSSIs, will need to be considered through the SEA.	May restrict certain FRM objectives if they are shown to be likely to have a significant effect on a SSSI.	• Biodiversity, flora and fauna • Water environment
Natural Environment and Rural Communities (NERC) Act (2006)	Provides guidance for the protection and enhancement of important habitat and species.	Requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England.	May restrict certain FRM objectives if they are shown to be likely to have a significant effect on priority species or habitats.	• Biodiversity, flora and fauna • Water environment
Salmon and Freshwater Fisheries Act (1975)	Aims to regulate practice relating to freshwater fisheries and salmon fishing.	The Act's main purpose is to protect fish species. However, it does indirectly affect flood risk. Restricting the obstruction to passage of fish may have implications for flood risk, as this will prohibit the use of fish weirs and mill dams.	May restrict certain FRM objectives if they are shown to be likely to have an adverse effect on fish passage or compromise a waterbody from achieving Good status under the WFD.	• Biodiversity, flora and fauna • Water environment
Contaminated Land (England) Regulations (2006)	Sets out provisions relating to the identification and remediation of contaminated land. The regulations identify contaminated land issues and pathways to pollution of surface, ground, estuarine and coastal water environments.	Although there is no heavy industry in Bromley, other light industries may have contaminated the land.	Flooding of contaminated land can have adverse impacts on factors such as biodiversity, water and soils	• Biodiversity, flora and fauna • Water environment • Soils
National Planning Policy Framework (2012)	The National Planning Policy Framework (NPPF) has replaced the set of national planning policy statements and national planning policy guidance notes, bringing them into one document. It sets high level national economic, environmental and social planning policy and includes a new presumption in favour of sustainable development.	The NPPF has replaced PPS25 along with the other PPSs and PPGs, and so comprises the national policy framework in relation to planning in areas of higher flood risk. The NPPF restricts development that would adversely affect sites European sites,	The strategy could restrict the Strategy objectives if they are shown to have a significant adverse effect on sensitive ecological and landscape sites in the Borough.	• Biodiversity, flora and fauna • Water environment • Landscape • Historic environment

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
		designated sites, including Green Belt, Sites of Special Scientific Interest (SSSIs) and Areas of Outstanding Natural Beauty (AONB), as well as locations at risk of flooding or coastal erosion.		• Population • Soils
PPS5: Planning for the Historic Environment Practice Guide (2010)	The guide assists local authorities, owners, applicants and other interested parties in implementing the policy *Planning Policy Statement 5 (Planning for the Historic Environment)*.	Provides guidance on how to conserve historic assets. This will provide advice on how to develop around historic assets, as well as ways best to conserve them from flooding.	May restrict certain FRM objectives if they are shown to be likely to have an adverse effect on historic assets in the Borough.	• Historic environment.
Historic Environment Good Practice Advice in Planning: Historic Environment Records (2014)	Provides information on good practice to assist local authorities, planning and other consultants, owners, applicants and other interested parties in implementing historic environment policy in the NPPF. Assists with access to Historic Environment Records.	Guide helps to assist in sustainable development, in helping with access to Historic Environment Records which has information about various historic assets.	None.	• Historic environment
Historic Environment Good Practice Advice Guide in Planning: Note 3: The Setting of Heritage Assets.	Provides information on good practice to assist local authorities, planning and other consultants, owners, applicants and other interested parties in implementing historic environment policy in the NPPF. Provides advice on the setting of historic assets, and how to understand the setting.	Understanding the setting of a historic assets will assist in design development of FRM measures.	May restrict certain FRM objectives if they are shown to be likely to have an adverse effect on historic assets in the Borough.	• Historic environment
Regional				
North Kent Rivers Catchment Flood Risk Management Plan (2009); and Thames Catchment Flood Management Plan (2009)	These CFMPs provide an overview of the flood risk in these catchments and set out the preferred surface water management strategy for future years. They outline the wider context for managing flood risk in London.	The CFMPs provide important context for the Strategy and set the strategic direction for managing flood risk from main rivers.	None	• Water environment
London Regional Flood Risk Appraisal – Greater London Authority (2009); and City of London Strategic Flood Risk Assessment (2012)	These regional flood risk assessments provide a high level overview of historical and future flood risk from local flood sources in the region.	Takes into consideration significant consequences on human health, economic activity, the environment and cultural heritage.	The Strategy will need to address these broad topics in a local context.	• Water environment • Population • Cultural heritage
London Plan – Greater London Authority (2013)	The Mayor's London Plan provides an economic, environmental, transport and social framework for development in London.	Forms a basis for local plans within London.	None	• Water environment • Population • Biodiversity, flora and fauna
Draft Further Alterations to the London Plan (FALP) – Greater London Authority (2014)	Proposed amendments to The Mayor's London Plan that provides an economic, environmental, transport and social framework for development in London.	Forms a basis for local plans within London.	None	• Water environment • Population • Biodiversity, flora and fauna
Thames Estuary 2100 Strategy	Provides recommendations for FRM for London and the	Provide important context for the Strategy.	None	• Water environment

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
(2002)	Thames estuary.			
Managing Water Resources & Flood Risk in the South East (2005); and East London Boroughs Strategic Flood Risk Assessment	Provides levels of strategic assessment of flood risk across the region.	Provide broad context for the Strategy.	None	• Water environment
London Rivers Action Plan (2009)	A tool to help restore rivers for people and nature. Provides guidance regarding improving the wildlife and amenity value of London rivers. Key aspirations include the improvement of flood management using more natural processes; reducing the likely negative impacts of climate change; reconnecting people to the natural environment through urban regeneration; and enhancing habitats for wildlife.	The watercourses within Bromley and surface water flooding are a key feature of the Strategy.	The Strategy will need to consider these aspirations in a local context and should seek ways	• Water environment • Biodiversity, flora and fauna
Thames River Basin Management Plan	The Thames River Basin Management Plan (RBMP) has been prepared to meet the requirements of the EU Water Framework Directive. It focuses on actions to address the protection, improvement, sustainable use of water and other pressures facing the water environment in the Thames River Basin.	Water quality and quantity is linked to the Strategy as flooding events can lead to water pollution and changes in water levels.	May restrict certain FRM options if likely to inhibit achievement of WFD objectives and detailed programme of measures. FRM options may be strengthened if they actively contribute to meeting the WFD requirements.	• Water environment
Cleaning the Air – Mayors Air Quality Strategy (2010)	Outlines the direction for air quality policy of the City of London through to 2015. It includes details for air quality management and monitoring the effectiveness of policies and measures that are introduced to reduce pollution.	Provides information on regional policies to improve air quality across London.	None	• Air Quality
Draft Climatic Change Adaptation strategy for London (2010)	The strategy aims to increase resilience to the future effects of climate change, sets targets for reducing carbon dioxide emissions in London, and seeks to deliver energy efficiency measures. It aims to make London a Low Carbon City and to achieve a range of associated environmental and social benefits.	FRM actions can contribute to the provision of adaptation measures to benefit people and biodiversity. FRM activities will generate carbon emissions.	The Strategy will need to demonstrate that it can deliver improved FRM measures whilst minimising the level of associated carbon dioxide emissions.	• Climate
London's World Heritage Sites – Guidance on Settings, Supplementary Planning Guidance (2012)	The guide supports the implementation of Policy 7.10. To provide a consistent interpretation of setting and understanding of the London's World Heritage Site's importance. Also provides consistency in decision making to conserve the World Heritage Sites.	Protection of heritage assets are considered in the Strategy and World Heritage Sites should be protected.	A FRM measure may impact on the setting and value of a World Heritage Site. The Strategy should demonstrate that it will not negatively affect a World Heritage Site.	• Historic environment
Local				
Preliminary Flood Risk Assessment Royal Borough of Greenwich (2011)	Provides levels of strategic assessment of flood risk across the Borough.	The flood risk assessment provides an important local context for the Strategy.	None	• Water environment
City of London Infrastructure Delivery Plan (2011)	Plan sets out the requirements for infrastructure in the City and the priorities for delivery. Provides guidance to help partnerships deliver this infrastructure in a timely manner to	Objectives in relation to flood risk and the water environment are included within the plan, which is of relevance to the Strategy.	None	• Water environment

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
	support development.			
London Borough of Greenwich Local Plan (2012)	Outlines the vision and objectives for the Borough in 2030 and includes strategic and more detailed policies used in determining local planning applications.	Plan is required by the Planning and Compulsory Purchase Act 2004 (amended) and in line with the new National Planning Policy Framework (2012). The Local Plan provides important local context for the Strategy	The Strategy will need to consider policies set out in the Local Plan.	• All
Greenwich Biodiversity Action Plan (2013)	Details the priorities for habitats and species and offers practical measures which can be implemented to achieve the conservation of the areas biodiversity heritage. The content of the plan is informed and guided by national targets so that its implementation is firmly linked to national priorities. An additional Habitat Action Plan for Rivers, Riverine Corridors and Associated Habitats has been produced that sets objectives for these particular habitats.	Objectives include the improvement of water quality, removal of barriers to aquatic species and enhancement of wetland and riverine habitats and connectivity and the issue of invasive species.	Objectives of the Greenwich BAP are linked to those of the WFD to enhance biodiversity and improve water quality status.	• Biodiversity flora and fauna
Regeneration Manifesto for Public Space (2009)	Outlines the aim for London boroughs to work with the mayor of London to revitalise public space and improve London's quality of life.	Provides a broad context to aims to increase and enhance open spaces within the Borough. The Strategy provides an opportunity to contribute to the objectives of the plan.	Protects amenity value of public open spaces.	• Human Health • Socio-economic • Biodiversity flora and fauna

Offices at

Atherstone
Doncaster
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Skipton
Tadcaster
Thirsk
Wallingford
Warrington

Registered Office
South Barn
Broughton Hall
SKIPTON
North Yorkshire
BD23 3AE

t:+44(0)1756 799919
e:info@jbaconsulting.com

Jeremy Benn Associates Ltd
Registered in England 3246693

Visit our website
www.jbaconsulting.com