London Borough of Lewisham Local Flood Risk Management Strategy

Strategic Environmental Assessment

Environmental Report
November 2014

London Borough of Lewisham
1 Laurence House
Catford Road
SE6 4RU

JBA Project Manager

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

Revision history

Revision Ref / Date Issued	Amendments	Issued to
Draft v0-1 / 1 September 2014	JBA review	David Revill
v0-2 / 9 September 2014	JBA review	Jack Southon
v1-1 / 18 November 2014	Minor amendments	Jack Southon
V2.0 November 2014	Issued to Client	Cathy Rooney

Contract

This report describes work commissioned by Lewisham Borough Council. 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

This document has been prepared as a final report for London Borough of Lewisham. JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

JBA Consulting has no liability regarding the use of this report except to London Borough of Lewisham.

Copyright

Carbon footprint

A printed copy of the main text in this document will result in a carbon footprint of 297g if 100% post-consumer recycled paper is used and 378g if primary-source paper is used. These figures assume the report is printed in black and white on A4 paper and in duplex.

JBA is aiming to reduce its per capita carbon emissions.

Non-Technical Summary

The London Borough of Lewisham 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 the Strategy objectives have the potential for both direct and indirect environmental benefits. The Strategy objectives L1 and L3 in particular have 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.

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 Lewisham Borough Council 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 Local Flood Risk Management 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

ALC ..... Agricultural Land Classification
AQMA ..... Air Quality Management Area
AQO ..... Air Quality Objectives
CAMS..... Catchment Abstraction Management Strategy
DLR..... Docklands Light Railway
FRM ..... Flood Risk Management
HMWB..... Heavily Modified Water Body
IDB ..... Internal Drainage Board
JBA ..... Jeremy Benn Associates
LBAP ..... Local Biodiversity Action Plan
LCA..... Landscape Character Area
The Strategy ..... London Borough of Lewisham 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
SAB..... SuDS Approval Body
SAC..... Special Area of Conservation
SAP..... Species Action Plan
SCA..... Special Character Area
SEA..... Strategic Environmental Assessment
SELGC..... South East London Green Chain
SoEP..... Statement of Environmental Particulars
SNCI ..... Sites of Nature Conservation Importance
SPA..... Special Protection Area
SPZ..... Source Protection Zone
SSSI..... Site of Special Scientific Interest
SuDS..... Sustainable Drainage Systems
WFD..... Water Framework Directive

1 Introduction

1.1 Background

The London Borough of Lewisham 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 the 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 the 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' ***Error! Bookmark not defined.***.

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 July 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), London Borough of Lewisham 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 London Borough of Lewisham is located in south east London (Figure 1-1) and takes its name from its largest settlement, Lewisham. It is bounded to the north by the River Thames, with the Royal Borough of Greenwich to the east, and the boroughs of Southwark and Bromley to the west and south respectively. The Borough is highly urban and includes the areas of Catford, Deptfod, Lewisham and Downham. It covers an area of 35km^2 (13.5 square miles) and has a population of approximately 284,000 people (2011 census)[5].

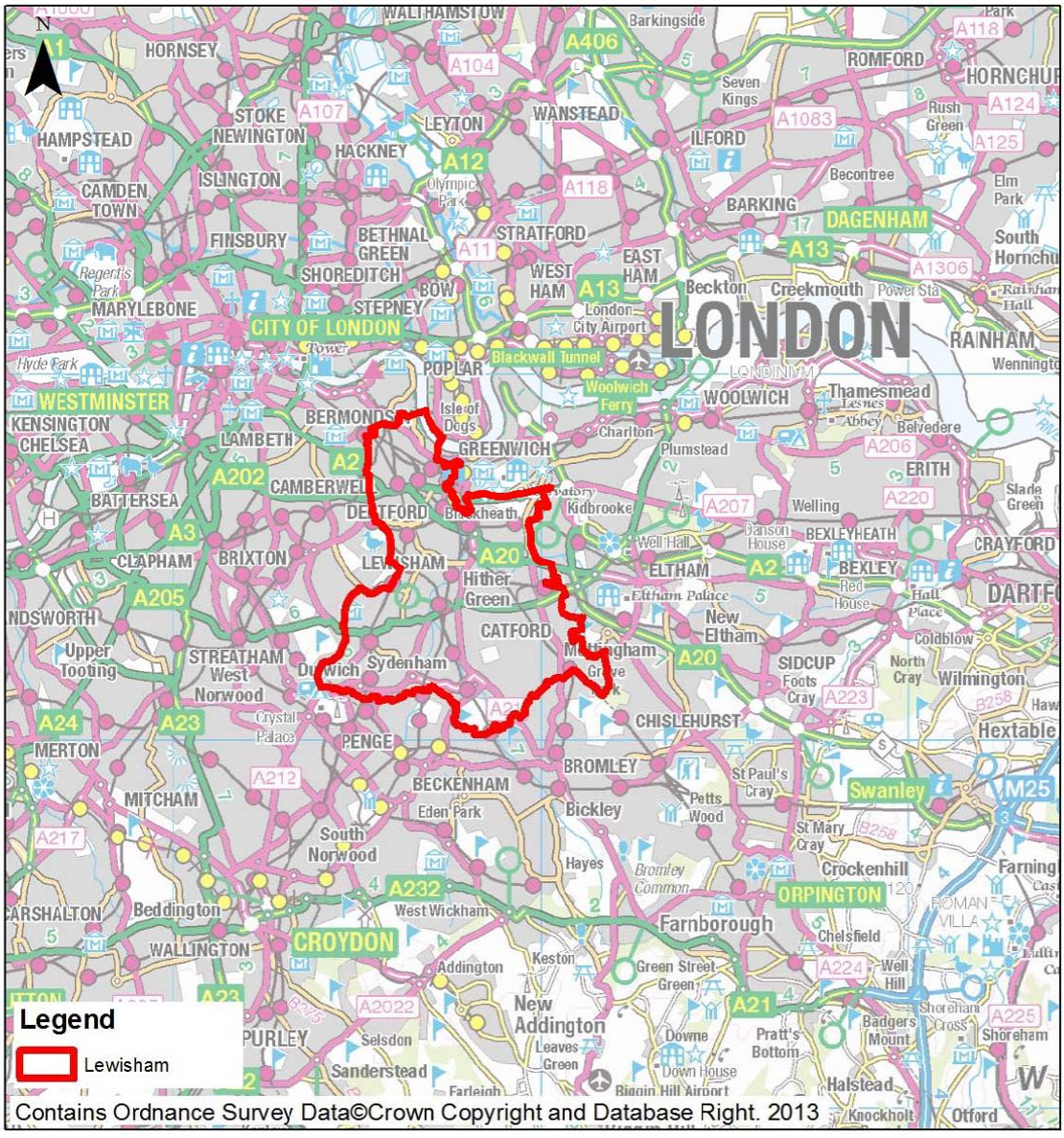

Figure 1-1: Study area

[5] London Borough of Lewisham (2013), Lewisham Joint Strategic Needs Assessment, Population webpage http://www.lewishamjsna.org.uk/a-profile-of-lewisham/demography/population

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 nine 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.
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.
	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.
	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'.

Consultee	Comment received	Action taken
	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.
	We welcome the recognition of the contribution of historic landmark buildings to the landscape and that this matter is highlighted under the key environmental issues.	Comments noted, no action required.
	Landscape and Visual amenity We also note and welcome the references to the Registered Parks and Gardens in the district. It may be worth noting (if appropriate) that changes to the river corridors can potentially impact on the significance of a registered park, if proposals to naturalise watercourses conflict with manmade interventions integral to the designated landscape.	Comments noted and issue included under key issues.
	Historic Environment We suggest some minor changes: • Registered Parks and Gardens could be identified by name here (third bullet). • There is a need to include reference to non-designated heritage assets. These might include locally listed buildings, but it is likely to have most relevance in this context to unscheduled archaeology. We recommend that you contact the Greater London Archaeological Advisory Service to ensure that areas of high archaeological potential, or archaeological priority areas, are identified and included in a map of heritage assets in this section. • 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	Comments noted: • Registered Parks and Gardens are identified by name. • No assets are at risk from flooding. • Heritage at Risk Register information has been updated to 2014.

Consultee	Comment received	Action taken
	associated with flood risk, this should be identified.	
	Historic Environment The map of conservation areas is helpful, we would recommend that it is revised to include all identifiable heritage assets, including listed buildings, registered historic parks and gardens, scheduled monuments and the extent of the identified areas of high archaeological potential.	New figure included (Figure 2-2) showing listed buildings, scheduled monuments, registered parks and gardens and World Heritage Sites of Lewisham. Areas of high archaeological potential was unable to be obtained.
	The section on key environmental issues identifies important general issues. We suggest that the fourth 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. It would be suitable to refer to the need for archaeological assessment and mitigation where flood risk measures could affect areas of archaeological interest or potential.	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 Borough of Lewisham, 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 Strategy may affect European sites which are located outside the administrative boundary of the strategy.

Lewisham 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 the closest sites to the Borough, located 9km to the north of the Borough boundary, to the north of the City of London and the River Thames. None of the European sites are hydrologically linked to Lewisham 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 B 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 (e)).

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)
London's Great Outdoors: A Manifesto for Public Space (2009)
Cleaning the Air – Mayors Air Quality Strategy (2010)
Draft Climatic Change Adaptation strategy for London (2010)
Local
Preliminary Flood Risk Assessment London Borough of Lewisham (2011)
London Borough of Lewisham Strategic Flood Risk Assessment (2008)
Ravensbourne River Corridor Improvement Plan (2010)
London Borough of Lewisham Core Strategy (2011)
Lewisham Unitary Development Plan Saved Policies (2004)
London Borough of Lewisham Infrastructure Delivery Plan (2010)
Lewisham Biodiversity Action Plan (2007)
Lewisham Sustainable Community Strategy 2008-2020 (2008)
Lewisham Local Implementation Plan (Transport) (2010)

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 Lewisham is located in the south east of London and covers an area of approximately 35km². Lewisham is a highly developed urban area consisting of mixed residential neighbourhoods and commercial centres. The north of the Borough has three main commercial centres at Deptford, Lewisham and Catford, which are surrounded by a broad hinterland of residential areas. The south of the Borough consists of large suburban inter-war and post-war residential estates.

The topography of Lewisham gently slopes from the east and west of the Borough to the River Ravensbourne, which flows through the centre of the Borough to the River Thames in the north. The highest viewpoints in the Borough are Crystal Palace at 109m above ordnance datum and Forest Hill at 105m above ordnance datum, both of which are located in the south west of the Borough.

There are a number of large and small open green spaces and parks located along the course of the River Ravensbourne, which form part of its floodplain and provide a green corridor through the Borough. These areas form part of a larger and wider network of parks and green spaces across the Borough, which make up 14% of the Borough's land area[6] and provides a significant positive contribution to the character of their surrounding areas. There are nearly 3km² of Metropolitan Open Land (MOL), over 3km² of Sites of Nature Conservation Importance (SNCI) and three Registered Parks and Gardens of Special Historic Interest in the Borough. However, there tends to be a lack of parks and open green spaces around areas of densely built Victorian and Edwardian terraces around the areas of Catford, Forest Hill, Lewisham and areas around Deptford. However, tree lined streets in these areas provide a small amount of green amenity.

The Council has identified a number of areas with open space deficiency (defined as areas that are more than 0.4km from a park that is 2ha or more in size). These deficient areas occur across a wide proportion of the Borough as dense urban development and pressure on land restricts access to local parks (**Error! Reference source not found.**).

[6] London Borough of Lewisham (2004), Unitary Development Plan, Chapter 3: Open Space http://www2.lewisham.gov.uk/lbl/planning/udp/chapter3.html

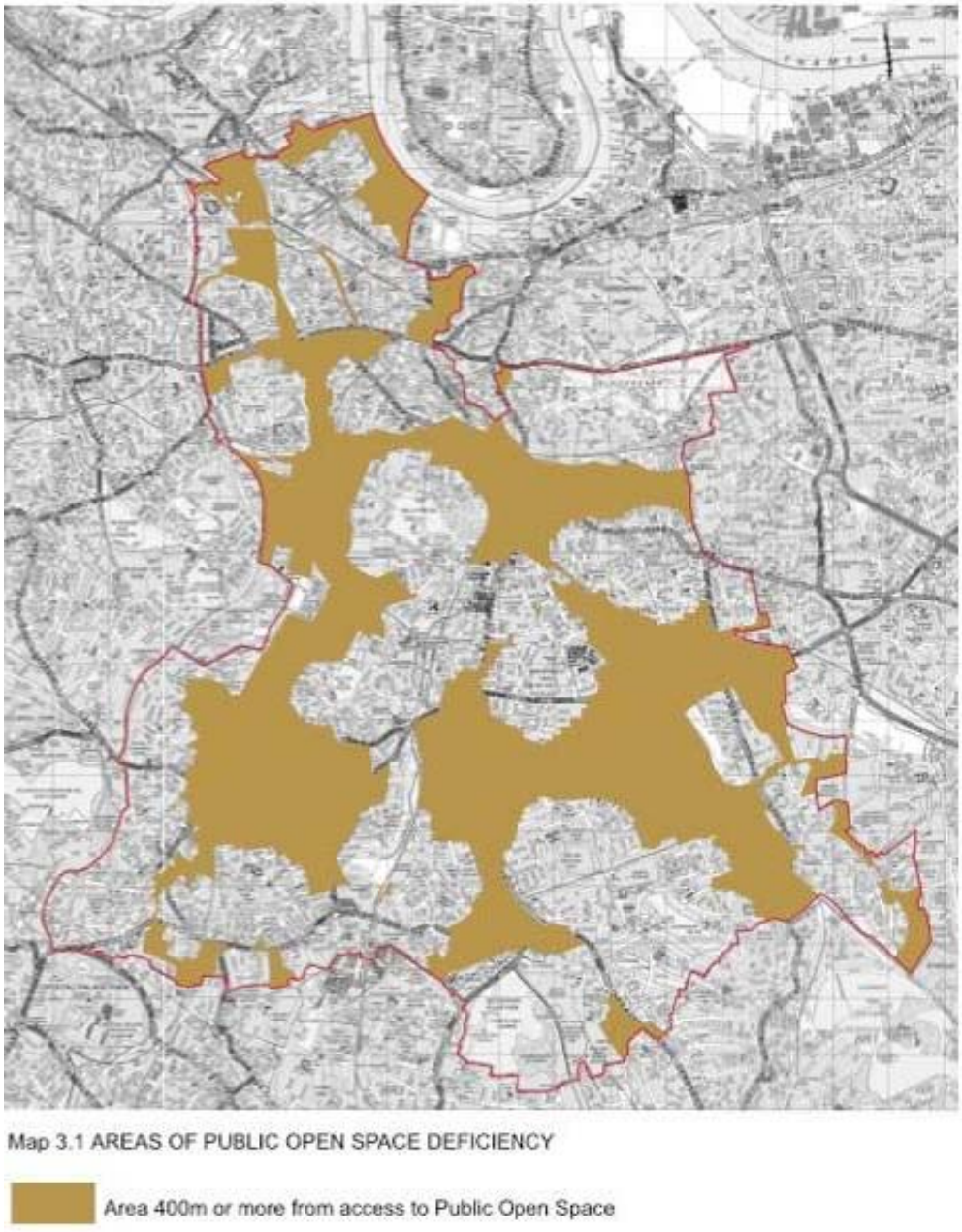

Figure 2-1: Areas of Public Open Space Deficiency (source: London Borough of Lewisham)

Green corridors are most notable along the River Ravensbourne and the Borough's railway corridors[7]. There are over 40 public parks, 14 of which have been given a Green Flag Award, which sets the benchmark for a national standard for parks and green spaces in the UK. Lewisham ranks among the top 10 boroughs in London for provision of Green Flag areas[8].

The Green Chain Walk runs through the west, south and east of the Borough and is part of the South East London Green Chain (SELGC). This is a series of inter-linked open green spaces that connect between the neighbouring boroughs of Bexley, Bromley, Greenwich and Southwark, and provide a valuable recreation amenity, landscape and wildlife resource for the wider south east London area.

There are two Special Character Areas (SCA) within the Borough: Blackheath and Sydenham Ridge. Blackheath was designated as an SCA in order to protect the architectural and historic character of

[7] Urban Practitioners (2010), Lewisham Borough Wide Character Study, Final Report, October 2010 http://www.lewisham.gov.uk/myservices/planning/policy/Documents/LewishamBoroughWideCharacterStudyP1.pdf

[8] Green Flag Award http://www.greenflagaward.org/

the Victorian village qualities including its skyline and viewpoints. Sydenham Ridge was designated to safeguard its scale and character and to also protect its skyline. These areas provide a valuable contribution to the character of the Borough and wider area and the Council resists development proposals that could adversely affect their character[9]. Important views and landmarks in the Borough have been identified by the Council and designated as Local Views and Local Landmarks[6]. There are 15 throughout the Borough, which include:[10]

- Horniman Museum (front facade), Forest Hill
- Horniman Gardens, Forest Hill
- Telegraph Hill
- Christchurch Forest Hill
- St. Bartholomew's Westwood Hill
- Foreshore, Deptford
- Blythe Hill Fields
- St Paul's Deptford
- Hilly Fields
- St Mary's Ladywell
- Ladywell Water Tower
- Lewisham Clocktower
- Hither Green Hospital Clock and Water Tower
- Mountsfield Park
- All Saints Blackheath.

There are also two strategic views across the northern part of the Borough towards St Pauls Cathedral; these are from Greenwich Park and The Point in Blackheath. These are protected views under The Town and Country Planning General Development Order, which restricts development within the viewing corridor to protect and enhance the foreground, background and wider setting of these strategic views.

Lewisham underwent 46 regeneration projects throughout the Borough between 2007 and 2013, with a further 15 projects at proposal stage; the majority of these are focused in the north of the Borough. Regeneration projects include improvements and enhancements to high streets, leisure centres, schools, riverside walks and cycle routes.

The Borough is characterised by two National Landscape Character Areas (LCA): Inner London (112) and Greater Thames Estuary (81)[11]. The Inner London LCA covers the majority 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 Lewisham is its network of green space and green space deficiency[12].

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 marshes. However, such characteristics are not present in the

[9] London Borough of Lewisham (2004), Unitary Development Plan, Part II, Chapter 2: Urban Design and Conservation http://www2.lewisham.gov.uk/lbl/planning/udp/chapter2.html

[10] London Borough of Lewisham Schedule 1 the Councils Proposals http://www2.lewisham.gov.uk/lbl/planning/udp/schedule1.html#SCH1A

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

[12] Natural England (2013), National Character Area Profile 112 Inner London http://publications.naturalengland.org.uk/publication/5360729876070400?category=587130

Lewisham section of this LCA, which is characterised by dense urban and industrial areas, where population density is high and development pressures are increasing[13].

Key environmental issues

Pressure from new development and associated infrastructure are likely to present significant challenges as the area responds to an increasing population and the demands of economic development and climate change. Urban greening is important in Lewisham as there are dense built up areas that have been identified as having open space deficiency.

Flood risk management measures have the potential to affect the landscape characteristics of the Borough. Proposals to naturalise watercourses in Registered Parks and Gardens may conflict with manmade interventions integral to the designated landscape. 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.

2.5 Biodiversity, flora and fauna

Several rivers flow through the Borough: a short section of the River Thames at its northern boundary, including a section of its tributary, Deptford Creek and the River Ravensbourne, including its tributaries the Pool River, River Quaggy and Spring Brook. These watercourses form wildlife corridors through the Borough. The Waterlink Way further increases the wildlife corridors and connectivity within the Borough by a linked network of open spaces and waterways from Beckenham Place Park to Deptford Creek, following the line of the rivers Ravensbourne, Quaggy and Pool. During the last 10 years the Council and the Environment Agency have undertaken works to re-naturalise the rivers in the Borough. Storage capacity has been incorporated for use in flood events and this has been of benefit to plants, creating more diverse natural environments along the rivers Quaggy and Ravensbourne[14].

The following priority habitats are listed as part of the Lewisham Local Biodiversity Action Plan (LBAP):

- Parks, open spaces and cemeteries
- Railway linesides
- Rivers
- Standing open water.

The following priority species are listed as part of the LBAP:

- Bats
- Black redstart
- House sparrow
- Songthrush
- Stag beetle

2.5.1 Designated nature conservation sites

Lewisham 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

[13] Natural England (2013), National Character Area Profile 81 Greater Thames Estuary http://publications.naturalengland.org.uk/publication/4531632073605120?category=587130

[14] 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

- South West London Waterbodies Ramsar
- Richmond Park Special Area of Conservation (SAC)
- Wimbledon Common SAC
- Epping Forest SAC
- North Downs Woodlands SAC.

The Lee Valley SPA and Ramsar sites are the closest sites to the Borough, located 9km to the north of the Borough boundary, to the north of the City of London and the River Thames. These sites are designated for their wetland habitats and support internationally important numbers of wintering wildfowl. The Thames Estuary and Marshes SPA and Ramsar sites are located on the south side of the Thames Estuary, 26km to the east of Lewisham. The sites support internationally important numbers of wintering wildfowl. The South West London Waterbodies SPA and Ramsar sites are located 22km west of Lewisham and comprise 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. The three SPAs and Ramsar sites are not directly hydrologically linked to the Borough, although the Thames Marshes SPA and Ramsar sites are indirectly linked via the River Thames. Richmond Park SAC is located 9km to the west of Lewisham, whilst Wimbledon Common SAC is 12km to the west and Epping Forest SAC is located 14km to the north. There are no SSSIs in the Borough. The nearest SSSI is Oxleas Woodlands SSSI located approximately 3km to the east of the Borough.

Lewisham has four sites of major ecological importance in London: Beckenham Place Park, Blackheath, the Thames/Deptford Creek, and New Cross Gate to Forrest Hill railway cutting. Blackheath and Beckenham Place Park support important areas of acid grassland, which is a rare habitat in Lewisham (and rather uncommon in London as a whole). The ponds at Blackheath constitute a substantial proportion of the Borough's still water habitat and the park is considered an important nature conservation area within the Borough. Deptford Creek supports fresh and saltwater plants and animals.

Brookmill Park Nature Reserve supports areas of marsh, water and grassland, which have the tendency to flood at high tides. A small ornamental lake is present within the park which is located alongside the River Ravensbourne. Sydenham Cottages nature reserve lies adjacent to the River Quaggy and once formed part of an extensive water meadows system before the river was realigned and a concrete channel installed[15]. Dacres Wood nature reserve supports a large population of frogs and population of smooth newts *(Lissotriton vulgaris)*. Ladywell Fields recently underwent a major capital programme of landscape and river enhancement works to create wetlands and aid flood alleviation.

There are approximately 25 non-statutory Sites of Local Importance in the Borough, which cover an area of 474 hectares (13% of the Borough) and a further 39 Sites of Borough Importance. In addition, there are six Local Nature Reserves (LNRs) within the Borough. Burnt Ash Pond Nature Reserve is an important amphibian site in the Borough with a large breeding population of common toad *(Bufo bufo*). The pond also supports smaller numbers of common frog (*Rana temporaria***)** and smooth newts. The pond was first recorded in 1870, but is vulnerable to drying out during recent dry summers[16].

Invasive species found within Lewisham include Japanese knotweed, Himalayan balsam and giant hogweed. These have spread prolifically over the past couple of decades effecting the River Ravensbourne, River Quaggy and River Pool. Parrot's feather and floating pennywort occur in a couple of ponds in Lewisham, with Australian swamp stonecrop identified in the part of Greenwich Park that intersects the boundary to Lewisham[17].

The 'Three Rivers Clean-up' is a catchment (four Borough) and NGO partnership project where volunteers are engaged in the clean-up of the river system and specifically with the removal of Himalayan Balsam and Giant Hogweed. Flooding has the potential to cause the movement of

[15] Natural England (2011), London's Natural Signatures: The London Landscape Framework. Chapter 18: The River Ravensbourne http://www.naturalengland.org.uk/Images/01-execsummary_tcm6-14408.pdf

[16] London Borough of Lewisham (2013), Burnt Ash Pond webpage http://www.lewisham.gov.uk/inmyarea/openspaces/nature-reserves/burnt-ash-pond/Pages/default.aspx

[17] Environment Agency (2013), Lewisham: London Borough Environmental Fact Sheet August 2013 http://www.environment-agency.gov.uk/static/documents/Research/Lewisham_2013.pdf

detritus and rubbish downstream but also contributes to the spread of these invasive species through the movement of seeds and plant fragments. Any flood risk management works at these locations could lead to the spread of detritus/rubbish and the movement of these species.

2.5.2 Fisheries

The tidal River Thames, which includes the section of the river at the northern edge of the Borough, supports a mixture of freshwater, estuarine and marine fish including species such as bream, dace, eel, sea trout, bass, flounder and smelt. Commercial eel fishing occurs in the tidal Thames throughout Lewisham with eel populations currently considered sustainable.

Inter-tidal habitat is generally limited along the Tidal Thames through London due to the presence of hard defences and urban development. However, new developments and flood defence replacement in Lewisham, such as those along Deptford Creek, have created valuable new foraging habitat for fish. Works by the Environment Agency at Ladywell Fields have included the provision of fish shelters, riffles and weirs to ensure suitable fish habitat is available at low water levels. The most commonly encountered fish at Ladywell Fields are eel and stickleback.

The River Ravensbourne and Pool River support good coarse fish populations in the limited areas of parkland where the river has remained in its natural channel, whilst bullhead (Biodiversity Action Plan priority species), have been recorded in the lower reaches of the Ravensbourne during recent fisheries monitoring work. The River Quaggy supports populations of smaller fish species such as stone loach, stickleback and minnow.

Key environmental issues

A number of nature designated sites, such as Beckenham Place Park and Blackheath support ponds and wetland habitats. 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. Invasive species, particularly Japanese Knotweed and Himalayan Balsam have spread within the Borough and future flood events are likely to result in the further spread of these species.

Future incidences of flooding could potentially damage and change the nature of habitats and supporting species composition within the 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

Four main rivers flow through the Borough - the River Ravensbourne and its tributaries the River Quaggy, Pool River and Spring Brook, whilst the River Thames forms part of the northern boundary of the Borough. The Ravensbourne rises in the Borough of Bromley and flows northwards towards Lewisham before flowing into the tidal Thames at Deptford, where its tidal reach is known as Deptford Creek. The Ravensbourne is joined by the River Pool near Catford and by the River Quaggy, which rises in Bromley, at Loampit Vale. Numerous other small streams and surface water outfalls join the main river between its source and confluence.

Lewisham 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 every day[18]. Most of the Borough falls within the 'London Water Resource Zone', which has been designated as an area that is 'seriously water stressed'[19] the Borough also falls within the London Catchment Abstraction Management Strategy (CAMS) area, which has been assessed as having 'no water available'.

Average water consumption in the borough in 2011/12 was 165 litres per person per day (pp/pd). These figures have remained relatively stable over the past decade and are in line with the London average, but are higher than the UK average of around 145l pp/pd[14].

[18] Thames Water (2014) Supplier enquiries. http://www.thameswater.co.uk/17213.htm

[19] Environment Agency (2013), The challenges for water resources in London webpage http://www.environment-agency.gov.uk/research/library/publications/41045.aspx.

The River Ravensbourne is the major surface water resource for abstraction in Lewisham and provides water for public water supply and industry. 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 in the region[17]. The chalk aquifer is assessed as over-licensed and is managed to avoid groundwater flooding of London's deep infrastructure. There are seven licensed abstractions from groundwater in the Borough, which are mainly for public water supply, but also for use in the energy sector[17]. A water treatment works (WTW) operated by Thames Water is also located within the Borough.

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[17]. 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 Borough of Lewisham 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.

Five Water Framework Directive (WFD) designated river water bodies are present in the Borough: River Ravensbourne (Keston - Catford and Catford to Deptford sections), rivers Thames, Quaggy and Pool River. These rivers are classified as Heavily Modified Water Bodies (HMWB) and as priority water bodies for improvement action under the WFD. The heavily modified status of these water bodies means that often structures block fish passage resulting in limitations to fish migration and spawning success.

River water bodies in Lewisham are classified as Moderate of 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 or Poor and are also Poor for fish. Physio-chemical status is described as Good or Moderate, although not all waterbodies have been assessed[20].

2.6.3 Surface water quality

Water pollution does not tend to be a major issue in Lewisham[14]. There were no major (Category 1) pollution incidents in the Borough between 2005 and 2012, although there were two significant (Category 2) and 53 minor (Category 3) incidents during this period. The most frequent cause was containment failure. There is no Sewage Treatment Works (STW) in Lewisham, 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 Lewisham 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, industry, feeds rivers and support wetlands. Groundwater has been a contributing factor to a number of Lewisham's past flooding.

Impacts on groundwater are broadly related to land use. A number of pressures and risks have been identified for the Borough and include[20]:

[20] Environment Agency (2009) River Basin Management Plan: Thames River Basin District http://www.environment-agency.gov.uk/research/planning/125035.aspx

- Abstraction and flow regulation: impact on surface waters, ground water, water balance (ground water) and terrestrial ecosystems.
- Misconnected domestic drains.
- Diffuse pollution sources: road run-off, pollutants from domestic and agricultural sources.
- Inputs of nitrates, pesticides, solvents and hydrocarbons.

Land contamination from historical sources poses a particularly high risk to groundwater used for public water supply in the lower Ravensbourne valley between Lewisham and Deptford. Redevelopment of sites such as the former Seager Distillery within the inner Source Protection Zone for Deptford Pumping Station are considered to pose a much higher potential risk than those on the London Clay in Catford or Bell Green[1720].

Lewisham lies within a Groundwater Source Protection Zone (SPZ) in the Total Catchment (Zones 1 and 2). Lewisham also lies within a Groundwater Safeguard Zone, which is protected because of the risk of pesticides and solvents, and within a Groundwater Vulnerability Zone for a minor aquifer (classed as High). The Borough does not contain any Drinking Water Protected Areas and the drinking water status is classed as not at risk[1720].

2.6.5 Flooding

Approximately 22,400 properties are in areas at risk of flooding in Lewisham, accounting for 17% of all properties in the Borough. Around 58% of properties have been identified as at risk from tidal flooding, 40% from fluvial (river) flooding and 2% at risk from both tidal and fluvial flooding[17]. A total of 4,360 properties in the Borough were registered to receive flood warnings in March 2013.

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 Ravensbourne and River Pool, extending to the southern part of the Borough, and the River Quaggy, extending towards the east[21].

Groundwater has been a contributing factor to a number of Lewisham's past flooding events. Flooding events have occurred in a number of places, particularly those subject to a high water table. Groundwater may become elevated by a number of means:

- Above average rainfall for a number of months in Chalk outcrop areas.
- Shorter period of above average rainfall in permeable superficial deposits.
- Permeable superficial deposits in hydraulic continuity with high water levels in the river.
- Interruption of groundwater flow paths.
- Cessation of groundwater abstraction causing groundwater rebound.

The main flooding interaction between the separate surface water drainage system and the fluvial network system occurs when water levels in the main river system are high enough to stop surface water discharging into them, causing surface water to back up.

Key environmental issues

Lewisham 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, increasing water demand, climate change, leakage rates and meeting ecological requirements under the WFD. Measures to help meet future demands include desalination plants, reusing treated 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. 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.

[21] London Borough of Lewisham (2011), Surface Water Management Plan
http://councilmeetings.lewisham.gov.uk/documents/s3731/Appendix%202%20Surface%20Water%20Management%20Plan.pdf

2.7 Soils and geology

The whole of Lewisham is underlain by London Clay, which is capped by younger and more resistant strata of the Claygate Member to form ridges. The oldest rocks are in the Deptford area to the north, where an exposure of the Thanet Sand Formation and small inliers of Lewes Nodular Chalk Formation are surrounded by sands/gravels from the Lambeth Group. The soils also reflect the geology, with poor draining soils over the London Clay and sandier soils over the older rocks of the Lambeth Group, Thanet Sand and Lewes Nodular Chalk Formations which under the London Clay[22].

The complex geology beneath Beckenham Place Park in the south of the Borough is responsible in part for the acid grassland habitats present there, which is rare in the Borough and in London. The north-western part of the park and a small area in the south lie on the London Clay. Most of the middle of the Borough is underlain by the pebbly sand and gravel of the Blackheath Beds, with a narrow band of Woolwich and Reading Beds. River Terrace Gravels lie to the east. These three strata give rise to well-drained, acidic soils.

Groundwater has been a contributing factor to a number of Lewisham's past flooding. This has been a result of elevated groundwater from permeable superficial soils in the centre of the Borough, which surround the flood plain of the River Ravensbourne. Elevated groundwater from consolidated aquifers in the north western corner of the Borough around Deptford can also be a contributing factor[17].

Summerhouse Field lies on alluvium from the River Ravensbourne. The well-drained, acidic soils of the Blackheath Beds support acid grassland, a habitat rare in the Borough and also in London[23].

Key environmental issues

Flooding events could alter the extent or duration of flooding and therefore could have implications for soil quality and the underlying geology. However, given the highly urban nature of the Borough, the Strategy is not likely to impact on soil quality and geology in the Borough, with any impacts, such as through increased flood risk management activity, unlikely to be significant.

2.8 Historic environment

Early settlements such as Lewisham and Catford were built along watercourses and adjacent roads in the Borough. 11 mills were recorded in the Domesday Book of 1086 as being located along the River Ravensbourne. These mills ground steel for weapons and tanned leather, among other industrial uses[24], which could have led to historic land contamination in the area. The River Thames also played a key role in the development and growth of the Royal Naval Dockyards and shipbuilding along the Deptford waterfront.

The current A21 was historically the route of Watling Street, once an important Roman Road travelling east to west across Britain. The expansion of the railway in 1839 was a key influence on the growth of Forest Hill and Sydenham. The railway later arrived in Blackheath in 1849, playing a major part in the suburban development of the area[25].

Historic assets in the Borough include (see Figure 2-2):

- One World Heritage Site: Maritime Greenwich Buffer Zone, which crosses the north east boundary of the Borough. This is a site of cultural and natural heritage considered to be of outstanding international importance.
- One Scheduled Monument: Tudor naval storehouse at Convoys Wharf, which is a historic site of national importance.
- 540 listed buildings: these are statutorily designated and include two Grade I listed buildings: Boone's chapel in Lee High Road and St Paul's Church in Deptford.

[22] Natural England (2011) London's Natural Signatures: The London Landscape Framework, 17: South London Clays and Gravels http://www.naturalengland.org.uk/Images/22-south-london_tcm6-14429.pdf

[23] London Borough of Lewisham (2013), Beckenham Place Park webpage http://www2.lewisham.gov.uk/nature_conservation/Beckenham%20place%20extra%20text.htm

[24] Ideal Homes (2013), A History of South-east London Suburbs webpage http://www.ideal-homes.org.uk/lewisham/assets/histories/lewisham

[25] Urban Practitioners (2010), Lewisham Borough Wide Character Study October 2010 http://www.lewisham.gov.uk/myservices/planning/policy/Documents/LewishamBoroughWideCharacterStudyP1.pdf

- Three historic parkland areas: these are sites included on the Register of Parks and Gardens of Special Historic Interest: Manor House Gardens, Horniman Gardens and Grove Park Cemetery.
- 28 Conservation Areas: the largest number of conservation areas being in the north with a concentration of small conservation areas in the south west of the Borough.

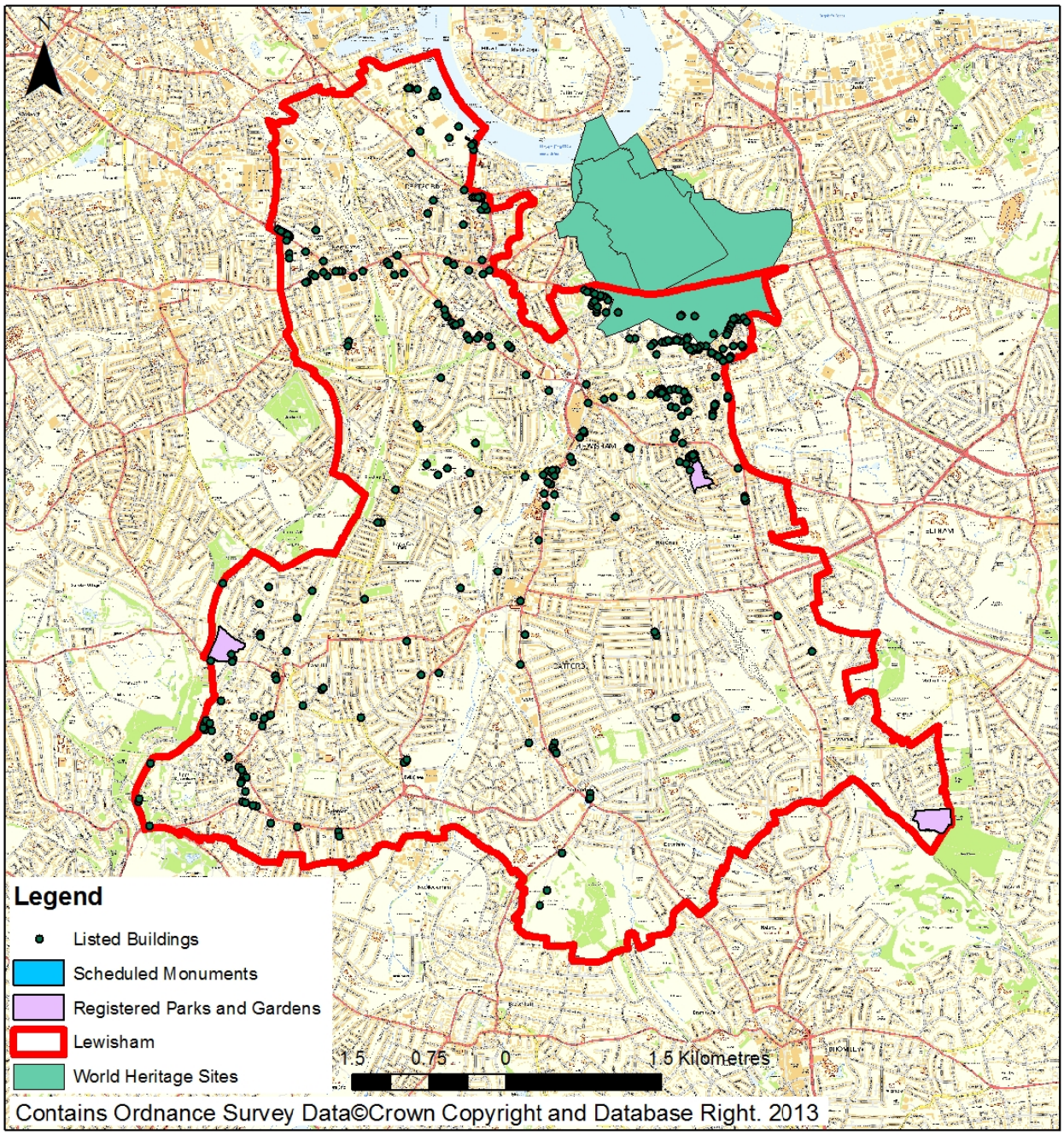

Figure 2-2: Lewisham heritage assets

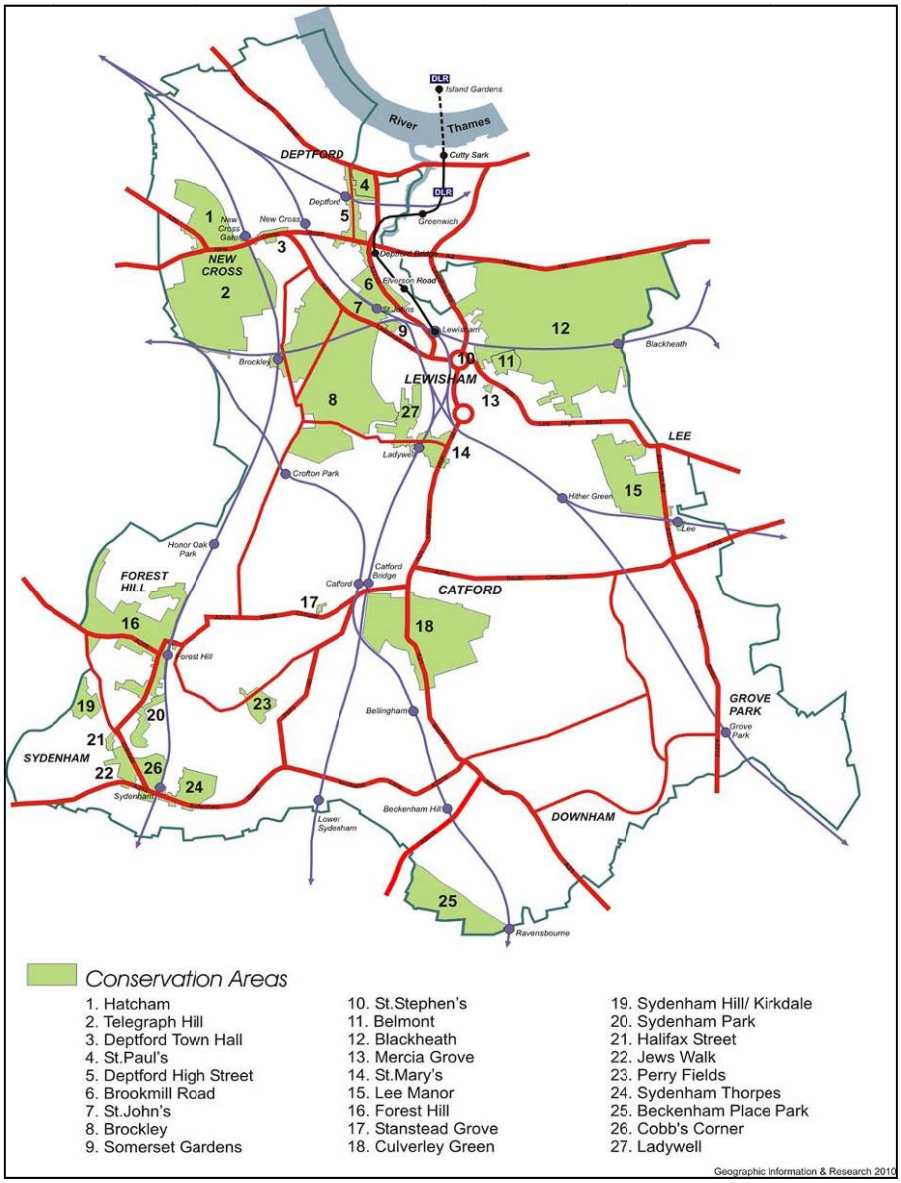

Figure 2-3: The London Borough of Lewisham Conservation Areas (source: London Borough of Lewisham

English Heritage's Heritage at Risk Register (2014) identifies one conservation area, two places of worship and 18 listed buildings at risk. The number of structures at risk as a result of neglect, decay or inappropriate development has risen since 2009[26].

Key environmental issues

Lewisham contains a wealth of historic assets. However, a small number of the most important of these assets are currently assessed as being under threat. Conservation areas face pressure from heavy and increased traffic levels and economic challenges such as viability of shops and businesses in these areas. There is a risk that adverse impacts upon aspects of Lewisham's cultural heritage could arise from flooding and increased flood risk in the future, whilst the implementation of flood risk management options selected by the Strategy could also have adverse effects, including indirect impacts on the setting of heritage assets. Where FRM measures could affect areas of archaeological interest, there would be a requirement for archaeological assessment and mitigation. 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.

[26] English Heritage (2013), Heritage at Risk Register 2012 London http://www.english-heritage.org.uk/publications/har-2014-registers/lo-HAR-register-2014.pdf

2.9 Population

The Borough's population is estimated to be approximately 284,000[28]. Between 2001 and 2011, the population grew by 17,000 (approximately 10%). This is greater than the England national average of 6.9% increase over the same period, whilst the population of London increased by 14%[27]. The population of the Borough is estimated to have grown by a further 9,000 in the two years to 2013, and is predicted to continue to rise, with an increase of approximately 5% between 2013 and 2018[28]. There are 39.5 people per hectare, making Lewisham the 11th least populated Borough in London (2001 census)[29]. Population density is fairly evenly spread across the Borough, with some denser areas located in the north and west[30].

Between 2002 and 2011 there has been an increase in persons aged under 65 living in the Borough and a decline in the number of older persons there. The percentage of people in the age groups of 0-15 and 16-64 are above the national and London averages with 20.7% (the national average being 18.9%) and 69.8% (the national average being 64.7%) respectively.

The average household size in Lewisham increased from 2.3 to 2.4 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 8.1% between 2001 and 2011 to 116,091[31]. Property types vary and include houses, flats and bungalows, with the most common type of accommodation being purpose built flats. Approximately 55% of dwellings are either council or privately rented, with an increase in privately rented properties and a decline in council rented properties in the 10 year period to 2011. There has also been a decline in people owning a property outright, with a mortgage or shared ownership from 50.1% to 43.6% between 2001 and 2011[32].

2.9.1 Health

Public Health England's 2013 health profile report for Lewisham shows that the health of people in Lewisham varies, with higher deprivation, child obesity, teenage pregnancy, GSCE attainment and lower life expectancy rates than the England average. However, adult healthy eating, smoking in pregnancy and alcohol related hospital stays among under 18 year olds are lower than the England average. The key causes of death in Lewisham remain circulatory disease, cancer and respiratory disease, all of which are above the England average. Life expectancy across the Borough, like elsewhere across the country, has increased over the last 20 years. However, it is marginally below the England average for both men and women. Life expectancy for men is 77.6 year old (78.9 England average) and for women is 82.3 years old (82.9 England average)[33].

Several health related priorities have been identified by the Council. These include tackling lifestyle issues such as diet, weight and physical activity, behaviour change, obesity, alcohol and smoking.

2.9.2 Deprivation

Social deprivation is an issue in the Borough, as is the case across London, and Lewisham is the ninth 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 Lewisham being the 31st most deprived borough in England[34]. The highest areas of deprivation are generally found in the northern and southern parts of the Borough. Small areas of the highest deprivation are found in the wards of Bellingham, Downham, Evelyn, Lewisham Central, Rushney Green and Whitefoot.

---

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

[28] Lewisham's Joint Strategic Needs Assessment (2013), Population http://www.lewishamjsna.org.uk/a-profile-of-lewisham/demography/population

[29] London European Partnership for Transport (2013), London Borough of Lewisham http://www.londoncouncils.gov.uk/services/lept/boroughmap/lewisham/

[30] Urban Practitioners (2010), Lewisham Borough Wide Character Study Part 1 (Final Report) http://www.lewisham.gov.uk/myservices/planning/policy/Documents/LewishamBoroughWideCharacterStudyP1.pdf

[31] London Borough of Lewisham, personal communication 15 November 2013.

[32] London Borough of Lewisham (2012), 2011 Census Second Release December 2012 http://www.lewisham.gov.uk/inmyarea/Documents/2011CensusSecondReleaseDec2012.pdf

[33] Public Health England (2013), Lewisham Health Profile http://www.apho.org.uk/resource/view.aspx?QN=HP_RESULTS&GEOGRAPHY=AZ

[34] London Borough of Lewisham (2013), Lewisham's Joint Strategic Needs Assessment, Index of Multiple Deprivation webpage http://www.lewishamjsna.org.uk/health-inequalities/index-of-multiple-deprivation

In 2010, 36.6% of the population in Lewisham was reported to be living in the 20% most deprived areas in England, which is significantly more than the England average of 20.3%. There are areas in the Borough recorded as being among the 5% most deprived in England. Approximately 17,900 children were reported to be living in poverty[33] (defined as families receiving means-tested benefits and low income) in Lewisham in 2010. Comparison with previous results published in 2004 and 2007 indicates deprivation is inherent in particular areas of the Borough and that the level of deprivation is increasing.

Key environmental issues

The population and number of households in the Borough are set to increase in the future, with growth expected to concentrate in the wards of Evelyn, New Cross and Lewisham Central. General health varies across the Borough with some health issues worse than the England average, including life expectancy. Poorer health is linked to areas of higher social deprivation. However, major development and regeneration plans are also proposed in these areas, which will aim to combat issues associated with crime, health, education and business growth[35].

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 enormously from a well-served transport network. Fast railway links into central London, Canary Wharf, London City Airport, the international terminal at Stratford and the extension of the Docklands Light Railway (DLR) provides access to economic and social opportunities for the Borough. There are 20 main line stations, three DLR stations and 42 bus routes in the Borough (see Figure 2-4).

[35] London Borough of Lewisham (2011), Local Development Framework, Core Strategy http://www.lewisham.gov.uk/myservices/planning/policy/Documents/CoreStrategyAdoptedVersion.pdf

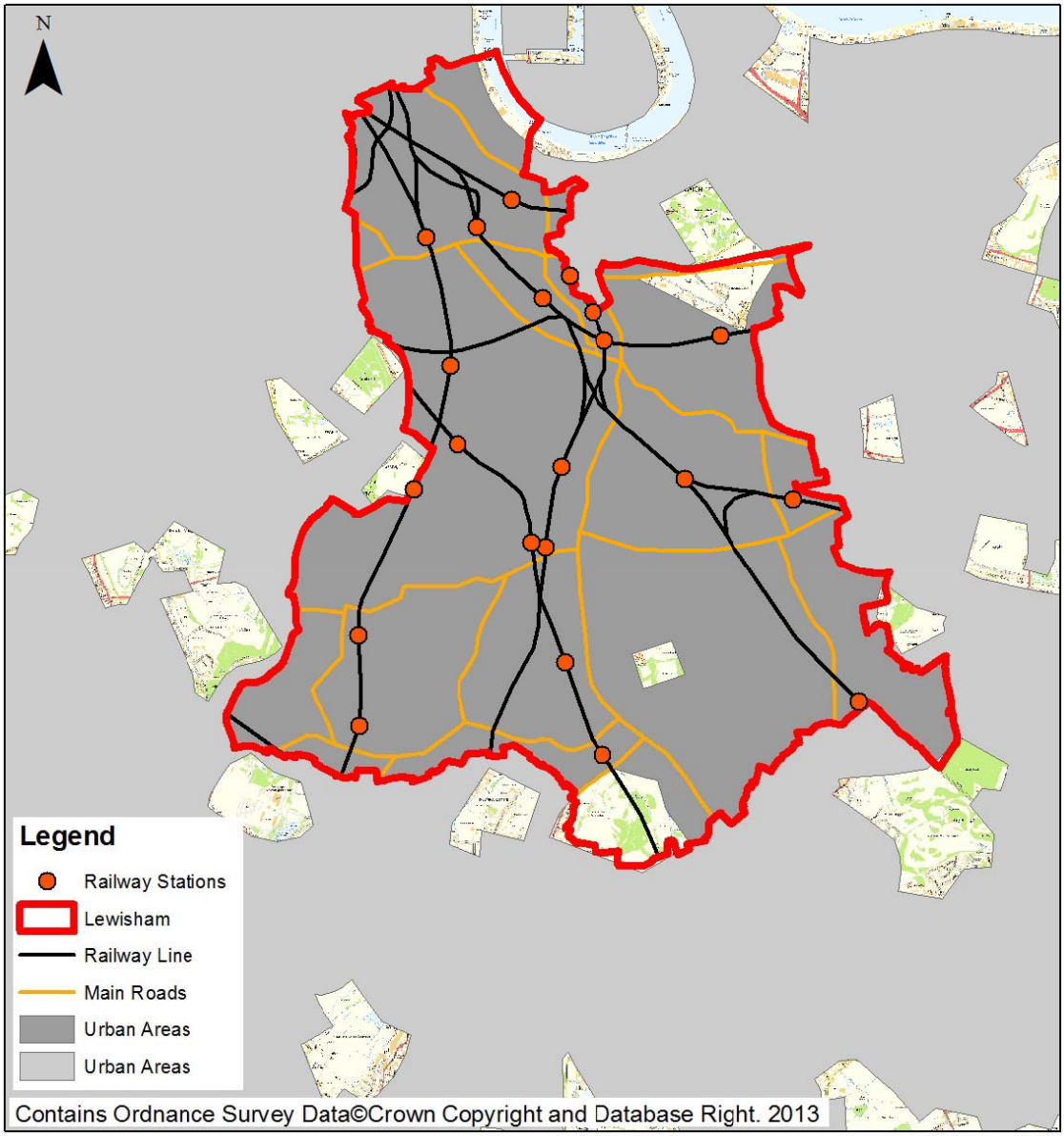

Figure 2-4: Transport infrastructure in Lewisham

The Borough has the ninth highest proportion of people travelling to work by public transport both nationally and regionally, and one of the lowest proportions of people travelling to work by car. This provides a strong indication that the public transport network is well used, with the highest percentage of train journeys connected to the most affluent wards in the Borough[36].

Lewisham forms part of the London Strategic Road Network with the south circular (A205) passing through the Borough and linking it to the centre of London. Car ownership is relatively low, with a third of households without access to a car, highlighting greater dependency on public transport.

National Cycle Route 21, the Downs and Weald, runs from Greenwich down through Lewisham following the Waterway link along the River Ravensbourne and on to Heathfield and Eastbourne. The national route also forms part of the Avenue Verte Greenway linking London and Paris via the Newhaven to Dieppe ferry[37].

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[14]. As part of the Thames Gateway development, there are plans to build over 18,000 additional new dwellings in

[36] London Borough of Lewisham (2012), Local Economic Assessment http://www.lewisham.gov.uk/mayorandcouncil/aboutthecouncil/strategies/Documents/LocalEconomicAssessment2012.pdf

[37] Sustrans (2013), Waterway Link webpage http://www.sustrans.org.uk/ncn/map/route/waterlink-way#./waterlink-way?&_suid=138174062919208849910593526933

the Borough over the next 15 years to meet local housing needs and comply with the London Plan requirements[35].

Lewisham Gateway is currently the single largest development within Lewisham. The scheme is a collaboration between Lewisham Council, the Greater London Authority, Transport for London and the developer with construction due to be completed in 2015. Lewisham Gateway will include:

- Shops, restaurants, bars and cafes
- Leisure facilities
- Up to 800 new homes
- A park where the Ravensbourne and Quaggy rivers meet.

2.10.1 Economy

The Borough is the third most populated of the inner London boroughs[38]. However, Lewisham's economy is one of the smallest in London. Nearly 70% of the Borough's workforce travel outside the Borough for work[39]. Employment within the Borough is mainly public sector, which includes the Council as the largest employer, followed by Lewisham Hospital, Lewisham College and the Metropolitan Police[40]. Private sector businesses tend to be medium to small scale retail, business services and construction, with a growing creative sector around Goldsmiths University.

The Borough has nine town centres, with significant expansion and regeneration expected in the north of the Borough at Convoys Wharf, Surrey Canal Triangle, Oxestalls Road, Plough Way, Lewisham Gateway, where there are plans for the provision of 9,450 dwellings[41]. Deptford High Street is proposed to become a major visitor and business destination[35].

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. There are four Greenway routes though the Borough, which provide walking and cycling routes within the Borough and other London Boroughs. The four routes include:

- Capital Ring: a 126km circular walk around London which runs through the south of the Borough.
- Green Chain Walk: an 80km path through the four south London Boroughs of Lewisham, Bexley, Bromley and Greenwich.
- Thames Path National Trail: a 294km route from the Cotswolds to the Thames Barrier in Greenwich.
- Jubilee Greenway: a 60km route circular route around London.

The Waterlink Way also provides a significant transport, recreational and biodiversity benefit, linking open spaces and waterways from Beckenham Place Park to Deptford Creek, following the line of the rivers Ravensbourne, Quaggy and Pool.

Together, these areas form part of the All London Green Grid strategic network of green infrastructure, linking parks, waterways and other green spaces across wider London. Delivery of infrastructure improvements is through Area Frameworks, with Lewisham forming part of the South East London Green Chain Plus framework that also comprises the neighbouring boroughs of Bexley, Bromley, Greenwich and Southwark. The framework's key objectives include increasing access to open space, conserving landscape and natural environment features, improving sustainable travel connections and enabling adaptation to the impacts of climate change.

[38] London Borough of Lewisham (2013), Lewisham's Joint Strategic Needs Assessment, Childhood obesity: facts and figures webpage http://www.lewishamjsna.org.uk/children-and-young-people/childhood-obesity/what-do-we-know/facts-and-figures

[39] London Borough of Lewisham (2012) Local Economic Assessment http://www.lewisham.gov.uk/mayorandcouncil/aboutthecouncil/strategies/Documents/LocalEconomicAssessment2012.pdf

[40] Lewisham Strategic Partnership (2013), The Borough webpage http://www.lewishamstrategicpartnership.org.uk/borough.asp

[41] London Borough of Lewisham (2011), Lewisham Local Implementation Plan 2011-2031 http://www.lewisham.gov.uk/mayorandcouncil/aboutthecouncil/strategies/Documents/Local%20Implementation%20Plan%202011-31.pdf

Key environmental issues

The Borough experiences excellent internal and external transport links with a large proportion of the population utilising the public transport network. The predicted increase in population will place greater pressure on the transport network, which could be exacerbated by increased future development pressure. In addition, development and commercial pressures are set to place increased demand on land availability, which will in turn affect the existing transport network.

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 Lewisham. New infrastructure should ensure accessibility through walking and cycling is promoted and enhanced as part of the development process.

2.11 Air quality

Periodic reviews of air quality in the Borough are taken for a range of potentially harmful substances. These are required to meet the targets set by the Government's Air Quality Strategy (2007)[42]. 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. An Air Quality Action Plan was produced in 2010 to demonstrate how the Council will improve air quality in the Borough, which complements the Mayor of London Air Quality Strategy – Clearing London's Air[43].

A review of air quality in Lewisham found targets for nitrogen dioxide (NO_2) and particles (PM_{10}) were likely to be exceeded in the northern part of the Borough and at locations close to the most congested roads. Five AQMAs were consequently declared in Jun 2001[44]. A detailed assessment in 2011 found the annual average nitrogen dioxide (NO_2) levels were exceeded at roadside sites, with a general improvement in nitrogen dioxide concentrations at roadside monitoring locations across the borough with many background sites showing a slight worsening. Air quality objectives for nitrogen dioxide occurring outside of the existing AQMAs were found to have been exceeded and a new AQMA was required.[45]

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 activity, unlikely to be significant.

2.12 Climate

Lewisham 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 over 109.4 precipitation days each year and an average annual rainfall of 611mm[46], which is almost identical to the UK average of 557.4mm[47].

[42] 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

[43] Greater London Authority (2010),Mayor's Air Quality Strategy http://www.london.gov.uk/priorities/environment/publications/mayors-air-quality-strategy

[44] London Borough of Lewisham (2008), Lewisham Air Quality Action Plan https://www.lewisham.gov.uk/SiteCollectionDocuments/LewishamAirQualityActionPlan.pdf

[45] London Borough of Lewisham (2011), Air Quality Progress Report for London Borough of Lewisham http://www.lewisham.gov.uk/myservices/environment/air-pollution/Documents/Progress%20Report%202011.pdf

[46] Weatherbase (2014) www.weatherbase.com

[47] Met Office (2014) City of London webpage http://www.metoffice.gov.uk/public/weather/climate/city-of-london#?tab=climateTables

Lewisham is the second lowest London borough for per capita CO2 emissions with 5.0 tonnes per capita compared to the London average of 6.9 tonnes. Lewisham also has one of the lowest rates of local authority collected waste to landfill in London at only 9%. This is due to 74% of the waste being incinerated (the highest amount in London).

The UK Climate Projection (UKCP09)[48] 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 [49].

Lewisham is considered to have one of the lowest carbon footprints in London with the primary contributor from domestic sources[50]. Lewisham has a distinctively different profile for emissions by sector in comparison to the national and London average. Figures for industry and commercial emissions are lower but domestic and road transport figures are higher. This is due to the prevalence of older, pre-1945 detached and semi-detached housing stock. Almost half of Lewisham's carbon dioxide (CO_2) emissions are from domestic properties.

Key environmental issues

Lewisham is considered to have one of the lowest carbon footprints in London with the primary contributor from domestic sources. 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 resulting impacts on material assets, the population, 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 Lewisham'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 Borough's 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 below.

Table 2-2: SEA scoping assessment summary

Receptor	Scoped In	Scoped Out	Conclusion

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

[49] Met Office 2013.

[50] London Borough of Lewisham (2008), Carbon Reduction and Climate Change Strategy. http://www.lewisham.gov.uk/SiteCollectionDocuments/ClimateChangeStrategyFINAL.pdf.

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 SNCIs and LNRs within Lewisham 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 all heritage assets, including major sites 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 Flood Risk Management (FRM) options and their impact (e.g. disconnection/ reconnection with floodplain, in-channel works/dredging, barriers to fish movement, reinstatement/ removal of natural morphology).
Historic environment	7	Preserve and where possible enhance important historic and cultural assets in the Borough.	Number of historic assets at risk from flooding. The proportion of conservation areas 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
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 Borough of Lewisham. 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.

SEA Objectives		Options and Effects		
		Do Nothing	Maintain current flood risk management regime	Manage and reduce local flood risk
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 exclusion, deprivation and health risks.	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.
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 the draft Strategy objectives 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 objectives

Objective reference	The Strategy objective
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.
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.
N3	Reducing Risk: Maintaining and improving FCERM systems to reduce the likelihood of harm to people and damage to the economy, environment and society.
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.
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.
G1	Support / deliver sustainable growth of the economy, make the area a nice place to work and do business.
G2	Help to support a better quality of life for resident and visitors.
G3	Contribute to building safer communities.
G4	Provide quality clean and green spaces for the public to enjoy and make use of.
G5	Support more active amenity within public spaces to improve health in the community.
G6	Improve the community understanding of local flood risk so they can take action to reduce the risk to themselves and their property.
G7	Promote social inclusion and tackle deprivation and discrimination.
L1	Avoid inappropriate development and promote new-development and re-development that contributes to a reduction in flood risk elsewhere and creates environmental benefit (e.g. sustainable urban drainage systems, reduced CO_2, increased biodiversity).
L2	Work with partners to ensure local flood defences are maintained.
L3	Require river restoration, appropriate flood defence and mitigation as part of development proposals, where appropriate.
L4	Encourage flood risk management activities so owners of watercourses (riparian owners) and flood defence structures take action to reduce the risk to themselves, their property and others.
L5	Continue to improve our understanding of flood risk and flood incidents by recording and monitoring flood incidents to inform future work programmes.
L6	Provide open, transparent governance of flood risk management.
L7	Engage with and support local communities to value and care for the green infrastructure used to manage flood risk.
L8	Deliver outcomes that make best use of public resources and available sources of funding.

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 The 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 The 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	Avoid inappropriate development and promote new development and re-development that contributes to a reduction in flood risk elsewhere and creates environmental benefit (e.g. SuDS, reduced CO_2, increased biodiversity).	+	+	+	+	+	+	+	+	++	+	++	Taking action to avoid inappropriate development whilst promoting new development that contributes to reducing flood risk and an improved environment has the potential to provide benefits for all of the SEA objectives. In particular, this objective may deliver significant benefits in terms of reducing the number of people that may be at risk of flooding, but actively seeking to discourage new development in flood risk areas, and will also reduce vulnerability to future flooding as a result of climate change. Potential benefits to natural environment features may also be possible as areas at flood risk may be safeguarded from development, protecting their biodiversity value, landscape quality or promoting their recreation and amenity value. New development may also be encouraged to safeguard sensitive environmental features or incorporate measures to deliver environmental gains.
L2	Work with partners to ensure local flood defences are maintained.	0	0	0	0	0	0	+	+	0	+	0	Ensuring the existing flood defences are maintained will mean the current level of flood risk is maintained, therefore achieving a positive effect to objectives 7, 8 and 10 by protecting the infrastructure and communities from flooding. However, it is not a significant effect as it does not reduce the existing risk of flooding to communities or infrastructure. Because this Strategy objective is maintaining the existing FRM, there are no effects on the remaining objectives.
L3	Require river restoration, appropriate flood defence and mitigation as part of development proposals, where appropriate.	+	+	+	++	+	++	0	++	0	++	+	River restoration will provide significant positive effects to SEA objective 4 as it will maintain existing, and where possible, create new riverine habitat with development. Improving riverine habitats will have a significant positive effect on SEA objective 6 as improving ecology of the river system will contribute to the achievement of the WFD objectives. River restoration will also have positive effects on SEA objective 1 as it will assist in protecting the integrity of the Borough's landscapes, while also

Objective ID	The Strategy objectives	SEA objective											Comments
		1	2	3	4	5	6	7	8	9	10	11	
													enhancing habitat connectivity, which will lead to the protection of existing habitats and species, thereby contributing to SEA objectives 2 and 3. Requiring appropriate flood defence with development will also have a significant positive effect on SEA objectives 8 and 10, as the new defences will help to minimise the risk of flooding to communities and infrastructure. There is a neutral effect on SEA objective 9 because this Strategy objective does not require SuDS to be implemented with new development, however there is an opportunity to include SuDS in any new development. New development will not enhance historic assets, although the appropriate flood defences as part of new development may help in protecting them. However, the effect is neutral as any protection from new development is unknown and not likely to be on a strategic scale.
L4	Encourage flood risk management activities so owners of watercourses (riparian owners) and flood defence structures 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.
L5	Continue to improve our understanding of flood risk and flood incidents by recording and monitoring flood incidents to inform future work programmes.	0	0	0	0	0	0	0	+	0	+	+	Improving understanding of flood risk will assist in decision making aimed at better FRM and reducing flood risk. This will primarily benefit people and property and will assist in reducing vulnerability to climate change.
L6	Provide open, transparent governance of flood risk management.	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 objectives, which are primarily focused on the implications of FRM.
L7	Engage with and support local communities to value and care for the green infrastructure used to manage flood risk.	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 positive effect on SEA objectives 8 and 10 because it maintains the current FRM, therefore not amending the risk of flooding to the Borough.
L8	Deliver outcomes that make best use of public resources and available sources of funding.	+	+	+	+	+	+	+	+	+	+	+	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.

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 L1 and L3 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 L3. These benefits will be achieved by discouraging development in areas at risk of flooding, such as river floodplains, and influencing new 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. 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 Strategy objectives N3 and L2. 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 Strategy actions against SEA objectives

Action ID	Action name	Strategy actions	SEA objectives											Comments
			1	2	3	4	5	6	7	8	9	10	11	
1	LW-Groundwater Risk Map	Borough wide study to improve and formalise understanding of areas at risk of groundwater flooding within the London Borough of Lewisham. Provide local groundwater flood risk map linked to conditions that result in flood risk to particular areas.	0	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.

Action ID	Action name	Strategy actions	SEA objectives											Comments
			1	2	3	4	5	6	7	8	9	10	11	
2	LW-Groundwater monitoring	Borough wide review of existing groundwater monitoring sites (boreholes) in relation to areas at risk within London Borough of Lewisham. Consider locations of additional sites. Review telemetry arrangements at existing and proposed sites.	0	0	0	0	0	0	0	+	0	+	+	
3	LW-Groundwater warning	Borough wide review the potential for area specific groundwater flood warnings based on improved understanding, risk map and monitoring. Aim would be to establish Flood Warnings Direct style flood warning areas and establish triggers for alert, warning and server warning categories or similar.	0	0	0	0	0	0	+	+	0	+	+	
4	LW-Culvert Blockage Risk Assessment	Borough wide review residual risk of culvert blockage throughout non-main river but look at options to include surface water systems / catchments in study area.	0	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.
5	LW-Borough wide storage and FRM	Borough wide - seek opportunities for incorporating storage or other FRM measures alongside other activity (e.g. public realm works, works to parks and open spaces).	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 10. 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.
6	LW-Borough wide runoff management	Borough wide - seek opportunities to intercept roof runoff into back gardens and/or front permeable paving and replace footways with permeable tarmac.	0	0	0	0	0	0	0	+	++	+	0	This action introduces small scale SuDS to the Borough, and therefore has a significant positive impact on SEA objective 9 by increasing the use of SuDS Borough wide. Increasing the use of SuDS will also contribute to minimising flood risk to communities and assets, thereby having a positive impact on SEA objectives 8 and 10. This action does not have an effect on the remaining objectives as it is specific to SuDS at a property level.
7	LW-Borough wide parks and open spaces	Borough wide - make parks and greenspaces runoff neutral as opportunities arise.	0	0	0	0	0	0	0	+	++	+	0	Making parks and greenspaces runoff neutral will mean an increase in the use of SuDS, therefore having significant positive impact on SEA objective 9. Reducing runoff from greenspaces will reduce floor risk within the Borough, therefore having a positive effect on objectives 8 and 10. There is potential for a positive impact on objectives 2 and 3 as making parks and greenspaces runoff neutral could be beneficial to habitats by allowing storage to occur, however it has been scored neutral as the impacts may not be positive.
8	LW- Review Highway Drainage assets	Review location, connectivity and condition of all highway drainage assets	0	0	0	0	0	0	0	0	0	0	0	This action has a neutral effect on all of the SEA objectives because it is a review rather than implementation of FRM measures, and if any were implemented as a result of the review the effect of the FRM measures will be of a small and localised scale rather than strategic.
9	LW- Highway drainage into rivers	Including the installation of flap valves on any highways assets draining into rivers.	0	0	0	0	0	0	0	0	0	+	0	Installing flap valves will reduce the risk of flooding to the transport infrastructure of the Borough, therefore providing a positive effect on SEA objective 10. This effect is minor as the installation will likely not have a large scale effect. The other SEA objectives are neutrally impacted as this action is specific to highways.
10	LW- private run off on to highway	Review urban and transportation design guides to incorporate SuDS, slot drains and permeable paving.	0	0	0	0	0	0	0	0	+	0	0	Incorporating SuDS within design guides provides a positive effect towards SEA objective 9 as it helps to increase the use of SuDS within the Borough. Including SuDS into design guides means that any new development is likely to follow these guides and therefore incorporate SuDS within the development. This action has a neutral effect on all of the SEA objectives because it is a review rather than implementation of FRM measures, and if any were implemented as a result of the review the effect of the FRM measures will be of a small and localised scale rather than strategic.
11	LW- Living roofs	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.	0	+	+	0	0	0	0	+	+	0	0	Promoting green infrastructure will lead to an enhancement of the habitats within the Borough, as green infrastructure has the potential to create habitats and improve wildlife connectivity with these habitats. Green infrastructure will also include introduction of SuDS, therefore there is a positive effect on SEA objective 10. This action will also reduce the risk of flooding to communities, as implementing SuDS provides better drainage solutions to mitigate flood waters.
12	LW-Pool Court Flood Resilience	Review SWMP recommendations for Pool Court; Flood Resilience.	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.
13	LW-Bellingham Drainage capacity	Investigate capacity of drainage system collecting runoff from gullies as manholes frequently surcharge and there is a natural dip that floods (Junction of Bell Green, Perry Hill, Perry Rise)	0	0	0	0	0	0	0	+	0	+	+	
14	LW-Bell Green Sainsbury Flood Resilience	Bell Green Sainsbury, consider whether Flood Resilience measures would be appropriate and if so, which measures.	0	0	0	0	0	0	0	+	0	+	+	
15	LW-Lewisham and Catford FAS	Progress Lewisham and Catford Flood Alleviation Scheme.	0	0	0	0	0	0	0	+	0	+	+	
16	LW-Bellingham Play Park Pond	Review connectivity of pond in or adjacent to Bellingham Play Park to the River Pool - consider potential for FSA.	0	0	0	0	0	0	0	+	0	+	+	
17	LW-Bell Green and Perry Rise SW flood risk review	Modelling shows ponding at junction of Bell Green and Perry Rise - review flood incident records and drainage arrangements in this location.	0	0	0	0	0	0	0	+	0	+	+	
18	LW-Southend Park de-culvert River Pool	River Pool Culverted through Southend Park - review potential for breaking out to create ecological and FRM benefit.	0	0	0	0	0	0	0	+	0	+	+	
19	LW-Pincott Place Rec ground drainage	Modelling suggests surface water ponding along Southwark / Lewisham border in recreation grounds to west of Pincott Place. Review flood history and drainage arrangements in this location. Work with Southwark to discuss potential mitigation if required.	0	0	0	0	0	0	0	+	0	+	+	
20	LW-Phoenix Community	Review potential for incorporating FRM measures into Meadows Estate - Phoenix	0	0	0	0	0	0	0	+	0	+	+	

Action ID	Action name	Strategy actions	SEA objectives											Comments
			1	2	3	4	5	6	7	8	9	10	11	
	Housing SuDS	Community Housing investing in green infrastructure - identify if wider benefits could be achieved. Engage with Phoenix to capture opportunities for community resilience planning.												
21	LW-Downham Way	Model shows flow path along Downham Way contributing to ponding at Southend (adjacent to River Ravensbourne).	0	0	0	0	0	0	0	+	0	+	+	
22	LW-Durham Hill Park	Review flood history and potential FSA opportunities within Durham Hill Park.	0	0	0	0	0	0	0	+	0	+	+	
23	LW-Downham Ward; determine TW actions & review FRM	SWMP reports high DG5 records - determine future Thames Water actions and review how these can be integrated with other local flood risk measures.	0	0	0	0	0	0	0	+	0	+	+	
24	LW-Whitefoot Wd; determine TW actions & review FRM	SWMP reports high DG5 flood records - determine future Thames Water actions and review how these can be integrated with other local flood risk measures.	0	0	0	0	0	0	0	+	0	+	+	
25	LW-S Circular/Verdant Ln; Review Quaggy flow path	Review Quaggy flow path (Hither Green Branch) including upstream of Main River extent, and interaction around South Circular and Verdant Lane.	0	0	0	0	0	0	0	+	0	+	+	
26	LW-Verdant Ln; SW ponding, review drainage	Well known surface water ponding issue around Verdant Lane including flooding to cemetery. Review drainage in this location and potential to hold water back upstream to reduce flood risk downstream. Review runoff from Ardgowan Road, Minard Road, Broadfield Road and Wellmeadow Road and seek to mitigate. Improve understanding of risk posed by culvert through railway.	0	0	0	0	0	0	0	+	0	+	+	
27	LW-Whitefoot Wd; Reduce risk, development	Identify opportunities to reduce risk by influencing ongoing development in the area (Excalibur Estate Renewal).	0	0	0	0	0	0	0	+	0	+	+	
28	LW-Blackheath Wd; review model results	Review Model results that show flow path across Blackheath Ward along train line running east to west and contributing to ponding around Lewisham Centre to investigate source and suggested measures to mitigate.	0	0	0	0	0	0	0	+	0	+	+	
29	LW-Blackheath Ponds	Investigation into flood mechanism and connectivity of Blackheath Ponds and consider remedial works at pond to prevent flooding.	0	0	0	0	0	0	0	+	0	+	+	
30	LW-Sydenham Ward; study on predicted SW flooding	Area shown as susceptible to surface water flooding (updated flood map for surface water), Investigation to understand why flooding is not observed and check performance of existing assets that may be preventing flooding in this location.	0	0	0	0	0	0	0	+	0	+	+	
31	LW-Sydenham Wells Park; review U/S storage	Review potential for 'upstream' surface water management / storage such as Sydenham Wells Park or Kirkdale Green to appreciate and understand potential issues and whether any measures could provide wider benefit elsewhere.	0	0	0	0	0	0	0	+	0	+	+	
32	Ground water level	Investigate Ground Water being high in Sydenham Road resulting in new tree pit bases not being at ground level.	0	0	0	0	0	0	0	+	0	+	+	
33	LW-Albion Villa Rd; predicted SW ponding; FRM	Modelling suggests surface water ponding at Albion Villas Road / Longfield crescent along train line. Review potential for FRM measures in Albion Millennium Green and opportunities to reduce risk by influencing design of proposed development.	0	0	0	0	0	0	0	+	0	+	+	
34	LW-Davids Rd; review ponding and subsurface assets	Review ponding shown in modelling around David's Road area - review links to historic canal turning point. Investigate subsurface assets in this location - understood to be a culvert in the area (can hear water flowing through underground culvert) - investigation required to improve understanding of system.	0	0	0	0	0	0	0	+	0	+	+	
35	LW-Devonshire Rd Nat Res; Reduce runoff	Look at opportunities to reduce runoff from Devonshire Road Nature reserve.	0	0	0	0	0	0	0	+	0	+	+	
36	LW-Sainsbury's Car Park; review storage potential	Review potential for storage around London Road / Forest Hill	0	0	0	0	0	0	0	+	0	+	+	
37	LW-Carholme Rd; review past RFCC bids, study	Review past RFCC bids for funding around Carholme Road and identify why these have been unsuccessful. Potential requirement for study to understand where problems are and what measures could alleviate consequences and probability. Known issue (picture on front cover of SWMP).	0	0	0	0	0	0	0	+	0	+	+	
38	LW-Mayow Park; review model ponding; FSA	Review modelled ponding in Mayow Park and potential for FSA to benefit Bell Green area.	0	0	0	0	0	0	0	+	0	+	+	
39	LW-Rushey Grn Wd; Reduce risk	Seek opportunities to reduce risk by influencing town centre redevelopment and realignment of Catford gyratory.	0	0	0	0	0	0	0	+	0	+	+	
40	LW-Catford Theatre; review of flood resilience	Review of tanking / flood resilience to Catford Theatre.	0	0	0	0	0	0	0	+	0	+	+	
41	LW-Rushey Grn Wd; review flood history & assets	Modelling shows well defined flow paths along road network. Review records of flooding and highlight critical drainage assets to relevant parties.	0	0	0	0	0	0	0	+	0	+	+	
42	LW-Catford Bridge; review model ponding	As part of Lewisham and Catford Flood Alleviation Scheme study, review area shown to be susceptible to ponding in the model results (Catford Bridge area) to understand why this is shown as an area at risk.	0	0	0	0	0	0	0	+	0	+	+	
43	LW-Mountsfield Park; review	Review opportunities to manage runoff from Mountsfield Park (previous issues with runoff	0	0	0	0	0	0	0	+	0	+	+	

Action ID	Action name	Strategy actions	SEA objectives											Comments
			1	2	3	4	5	6	7	8	9	10	11	
	runoff management	into neighbouring gardens).												
44	LW-Catford S Wd; determine TW actions; review FRM	SWMP reports high records of internal flooding from sewers- determine future Thames Water actions and review how these can be integrated with other local flood risk measures.	0	0	0	0	0	0	0	+	0	+	+	
45	LW-Bromley Ret Park; review opps for FRM	Review potential for FRM with development of Bromley Road Retail Park / bus garage etc.	0	0	0	0	0	0	0	+	0	+	+	
46	LW-Honor Oak; improve understanding of risk	As part of Lewisham and Catford Flood Alleviation Scheme study, improve understanding of flood risk from Upper Ravensbourne Honor Oak branch (fluvial from ordinary watercourse west of train line and surface water).	0	0	0	0	0	0	0	+	0	+	+	
47	LW-St Guys Hosp; review potential U/S storage	Review potential for storage upstream at St Guys Hospital athletic ground and or flood resilience / storage at property level if required.	0	0	0	0	0	0	0	+	+	+	+	
48	LW-Brockley Cmtry; review flood risk	Model results show ponding around Brockley Cemetery - review drainage arrangements and records of flooding in this area.	0	0	0	0	0	0	0	+	0	+	+	
49	LW-Undercliffe Rd; review drainage, flood records	Model results show ponding around Undercliffe Road - review drainage arrangements and records of flooding in this area (Surface and Ground Water).	0	0	0	0	0	0	0	+	0	+	+	
50	LW-Marsala Rd; review model results, flood records	Review model results and records of flooding around Marsala Road and Malyons Road.	0	0	0	0	0	0	0	+	0	+	+	
51	LW-Malyons Rd; review TW site	Clarify purpose of Thames Water site on Malyons Road.	0	0	0	0	0	0	0	+	0	+	+	
52	LW-Lewisham Central Wd; review FAS US.	As part of Lewisham and Catford Flood Alleviation Scheme study and wider Ravensbourne corridor aspirations, review potential for Flood Alleviation further upstream.	0	0	0	0	0	0	0	+	0	+	+	
53	LW-A21; review risk and drainage	Area highlighted by PFRA as area at high risk of flooding. Work with TfL to investigate A21 (Ladywell Road) drainage and review records of inundation and potential mitigation measures. Work with planning to influence development and renewal within this area to incorporate surface water management.	0	0	0	0	0	0	0	+	0	+	+	
54	LW-S Circular; review Quaggy flow path	Review Quaggy flow path (Hither Green Branch) including upstream of Main River extent, and interaction around South Circular and Hither Green Lane.	0	0	0	0	0	0	0	+	0	+	+	
55	LW-Armoury Rd; investigate Flood Wall Repairs	As part of Lewisham and Catford Flood Alleviation Scheme study investigate need for Armoury Road Flood Wall Repairs.	0	0	0	0	0	0	0	+	0	+	+	
56	LW-Cressingham Rd; review drainage and flood risk	Model results show ponding around Cressingham Road - review drainage arrangements and records of flooding in this area.	0	0	0	0	0	0	0	+	0	+	+	
57	LW-Broadway Fields; reduce risk near channel	Review opportunities to reduce risk around Broadway Fields channel enhancements.	0	0	0	0	0	0	0	+	0	+	+	
58	LW-Brookmill Rd; review flood/drainage mechanisms	Review flood / drainage mechanisms for Brookmill Road.	0	0	0	0	0	0	0	+	0	+	+	
59	LW-New Cross Ward; reduce flood risk, development	No reported incidents in New Cross ward, continue to monitor and review any reported incidents	0	0	0	0	0	0	0	+	0	+	+	
60	LW-Grove Park Ward; incorporate FRM measures	Review opportunities through proposed renewal and public realm enhancements to incorporate FRM measures.	0	0	0	0	0	0	0	+	0	+	+	
61	LW- Grove Park runoff	Investigate and seek to improve surface water drainage along Baring Road (through Grove park nature reserve), also affecting Southern Rail depot	0	0	0	0	0	0	0	+	0	+	+	
62	LW-Lee Grn Ward; review SW flood risk & assets	Modelling suggests much of surface water ponding within ward would be constrained to highways network. Improve understanding of risk by identifying critical assets and reviewing performance.	0	0	0	0	0	0	0	+	0	+	+	
63	LW-Manor Park; reduce risk	Review opportunities to reduce risk around Manor Park, Manor House Gardens and Hither Green Triangle should they arise.	0	0	0	0	0	0	0	+	0	+	+	
64	LW-Evelyn Ward; no issues, keep under review	No reported incidents in Evelyn ward, continue to monitor and review any reported incidents	0	0	0	0	0	0	0	+	0	+	+	

Table 5-5: Summary of impacts of 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	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

Receptor	SEA Objective		Summary of impacts	Mitigation requirement
Biodiversity, flora and fauna	**2**	Protect and enhance important and notable habitats and species in the Borough.	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.	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.
	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 The Strategy objectives have the potential for both direct and indirect environmental benefits. The Strategy objectives L1 and L3 in particular have 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 objectives L1 and L3) 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. Strategy actions that include green spaces such as nature reserves (action 35), 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 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 L1 – *Avoid inappropriate development and promote new development and re-development that contributes to a reduction in flood risk elsewhere and creates environmental benefit (e.g. SuDS, reduced CO_2, increased biodiversity).*
- Objective L3 – *Require river restoration, appropriate flood defence and mitigation as part of development proposals, where appropriate.*
- Objective L4 – *Encourage flood risk management activities so owners of watercourses (riparian owners) and flood defence structures take action to reduce the risk to themselves, their property and others.*

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 Lewisham Borough Council 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

LFRM 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.	Lewisham 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.	Lewisham Borough Council Thames Water Environment Agency
Objective L1 *Avoid inappropriate development and promote new development and re-development that contributes to a reduction in flood risk elsewhere and creates environmental benefit (e.g. SuDS, reduced CO_2, increased biodiversity).*	9 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 sites with SuDS schemes installed. 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.	Lewisham Borough Council Thames Water Environment Agency
Objective L3 *Require river restoration, appropriate flood defence and mitigation as part of development proposals, where appropriate.*	4, 6, 8 and 10	Promoting river restoration to avoid environmental degradation, while reducing flood risk to communities.	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. 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'). 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.	Lewisham Borough Council Thames Water Environment Agency Natural England

LFRM objective	SEA objective(s)	Potential significant effects	Monitoring indicator	Possible monitoring and/or delivery partners
Objective L4 *Encourage flood risk management activities so owners of watercourses (riparian owners) and flood defence structures 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.	Lewisham Borough Council Thames Water Environment Agency
Action 5: BR-Borough wide storage and FRM *Borough wide – seek opportunities for incorporating storage or other FRM measures alongside other activity (e.g. public realm works, works to parks and open spaces).*	9	Increase of SuDS schemes within the Borough through introducing ways to manage runoff.	Number of SuDS implemented.	Lewisham Borough Council Thames Water Environment Agency
Action 6: Borough wide runoff management *Borough wide – seek opportunities to intercept roof runoff into back gardens and/or front permeable paving and replace footways with permeable tarmac.*				
Action 7: Borough wide parks and open spaces *Borough wide – seek to make parks and greenspaces runoff neutral as opportunities arise.*				

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 1.6 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 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 London Borough of Lewisham Council Local Flood Risk Management 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

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

7.2.1 Part A: The Proposal

Type or permission/activity	Local Flood Risk Management Strategy (The Strategy)
Project/File Ref. Number	London Borough of Lewisham
National Grid Reference (NGR)	TQ 382752
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	13km
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	10km
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	10km
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	26km
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	26km
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 tetanus* (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	22km
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	22km
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	27km
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

7.2.2 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 Borough of Lewisham 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 Borough of Lewisham 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 Borough of Lewisham; 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	None	The SAC sites are located a significant distance from the boundary of the Borough of Lewisham; 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

Conservation (SAC) • Stag beetle *Lucanus cervus*.		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 Borough of Lewisham 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.

7.2.3 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:**	

7.2.4 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 flood risk management 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 flood risk management 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 flood risk management 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 flood risk management 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 flood risk management. 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 flood risk management 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 flood risk management objectives if they are shown to be likely to have a significant effect on a SAC.	• Biodiversity, flora and fauna
Urban Wastewater Treatment Directive –	Aims to protect the environment from the adverse effects of	Defines requirements for the collection and	The Strategy could support the aims of the	• Water

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
Directive 91/271/EEC concerning urban waste water treatment	urban waste water discharges and discharges from certain industrial sectors.	treatment of waste water in line with the population equivalent. The Strategy would need to consider potential impact of flood risk management objectives on water treatment sites.	Directive by reducing the risk of flooding to water treatment sites. However, The Strategy objectives may be restricted if they are shown to be likely to effect on wastewater discharges during flood events.	environment
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 flood risk management options if likely to inhibit achievement of WFD objectives and detailed programme of measures. Flood risk management 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 flood risk management 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 flood risk management 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.	Flood risk management 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 flood risk management 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 flood risk management is directly relevant to the Strategy. The Strategy can contribute to its aims, including promoting greater land management and land use planning, and	None	• Water environment • Population • Climate

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
		integrated urban drainage 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 flood risk management 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.	Flood risk management is one of 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 flood risk management 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 flood risk management.	• 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 flood risk management 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 flood risk management 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 flood risk management 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 flood risk management 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, and estuarine and coastal water environments.	Although there is no heavy industry in the Borough, other light industries may have contaminated the land.	Flooding of contaminated land can have adverse impacts on factors such as biodiversity, water and soils	• 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	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 strategy could restrict The Strategy objectives if they are shown to have a significant adverse effect on sensitive ecological and landscape sites in the	• Biodiversity, flora and fauna • Water

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
	and social planning policy and includes a new presumption in favour of sustainable development.	The NPPF restricts development that would adversely affect sites European sites, 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.	Borough.	environment • Landscape • 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 / Local				
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 (2011)	The Mayor's London Plan provides an economic, environmental, transport and social framework for development in London.	Forms a basis to local plans within London.	None	• All
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 (2002)	Provides recommendations for flood risk management for London and the Thames estuary.	Provide important context for the Strategy.	None	• Water environment
Managing Water Resources & Flood Risk in the South East (2005); and	Provides levels of strategic assessment of flood risk across the region.	Provide broad context for the Strategy.	None	• Water environment

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
East London Boroughs Strategic Flood Risk Assessment (2009)				
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 Lewisham 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 (2009)	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 flood risk management options if likely to inhibit achievement of WFD objectives and detailed programme of measures. Flood risk management options may be strengthened if they actively contribute to meeting the WFD requirements.	• Water environment
London's Great Outdoors: A 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
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 environmental and social benefits.	Flood risk management actions can contribute to the provision of adaptation measures to benefit people and biodiversity. Flood risk management activities will generate carbon emissions.	The Strategy will need to demonstrate that it can deliver improved flood risk management measures whilst minimising the level of associated carbon dioxide emissions.	• Climate
Preliminary Flood Risk Assessment London Borough of Lewisham (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
London Borough of Lewisham Strategic Flood Risk Assessment (2008)	Set strategic policy for flood risk management in the Borough and guides the development of the Strategy.	The flood risk assessment provides an important local context for the Strategy.	None	• Water environment
Ravensbourne River Corridor Improvement Plan (2010)	Provides specific guidance for the Ravensbourne corridor that lies within the boundary of the Thames Gateway with focus on areas of planned growth and investment. It sets a future vision for the catchment, provides a description of the landscape	Provides useful information on local schemes within the borough catchment	The Strategy will need to consider local schemes within the catchment and has the potential to contribute to biodiversity enhancements through new flood risk	• Water environment • Biodiversity flora and

Plan/Policy/Programme	Overview	Relevance to The Strategy	Conflict with The Strategy	Primary SEA topic
	character areas it contains and provides strategic design and management guidance to influence future development.		management activities.	fauns
London Borough of Lewisham Infrastructure Delivery Plan (2010)	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 support development.	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
London Borough of Lewisham Core Strategy (2011)	The Plan sets out the long term spatial vision for Lewisham to 2026 and includes strategic and more detailed policies used in determining local planning applications.	The Plan sets out the vision and the high level planning policies for the Borough as a whole with the overall aim of promoting and managing sustainable development.	The Strategy will need to consider policies set out in the Local Plan, particularly if the Strategy proposes to implement new development, which may be restricted by planning policy.	• All
Lewisham Unitary Development Plan Saved Policies (2004)	The UDP forms part of the development plan for the borough together with the Lewisham Core Strategy and the London Plan.	Provides important context for new developments in the Borough that require planning permission.	The Strategy will need to consider policies set out in the UDP.	• All
Lewisham Biodiversity Action Plan (2007)	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 Lewisham BAP are linked to those of the WFD to enhance biodiversity and improve water quality status.	• Biodiversity flora and fauna
Lewisham Sustainable Community Strategy 2008-2020 (2008)	Sets out strategic objectives to achieve community benefits in the future, including reducing inequality, promoting sustainable resource use and sustainable development, and improving the local environment.	Provides a broad context to aims to increase and enhance the quality of life within the Borough. The Strategy provides an opportunity to contribute to the objectives of the plan.	The Strategy will need to demonstrate that it can deliver improved flood risk management measures whilst contributing to the objectives of the plan.	• All
Lewisham Local Implementation Plan (Transport) (2010)	Provides information on transport patterns in the borough and sets strategic objectives to achieve safer, cleaner and improved transport provision.	Provides important context for the Strategy and seta the strategic direction for managing and improving transport infrastructure in the Borough. The Strategy provides an opportunity to contribute to the objectives of the plan.	The Strategy will need to demonstrate that it can deliver improved flood risk management measures whilst contributing to the objectives of the plan.	• Material assets

Offices at

Atherstone
Doncaster
Edinburgh
Haywards Heath
Limerick
Newcastle upon Tyne
Newport
Saltaire
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