



Northamptonshire Local Flood Risk Management Strategy Strategic Environmental Assessment Environmental Report – Part 4 Non-technical Summary

Northamptonshire County Council
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Document Status

This is the final Non-technical Summary of the Environmental Report, which has been revised and updated as necessary after public consultation.

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1. BACKGROUND

- 1.1. This document forms the Non-technical Summary of the Strategic Environmental Assessment (SEA) Environmental Report on the Northamptonshire Local Flood Risk Management Strategy (LFRMS). It provides a summary of the three Parts which form the Environmental Report, as set out below, and has been structured to reflect the format and content of these 3 Parts.

The Environmental Report

- 1.2. The Environmental Report is the main report of the SEA and it is formed of three Parts as follows:
- **Northamptonshire Local Flood Risk Management Strategy - Strategic Environmental Assessment Environmental Report - Part 1: Introduction** sets the context for the SEA and discusses parallel assessments, providing an outline of the content and main objectives of the Northamptonshire LFRMS and identifies where the requirements of the SEA Regulations have been met in the Environmental Report;
 - **Northamptonshire Local Flood Risk Management Strategy - Strategic Environmental Assessment Environmental Report - Part 2: Scoping Report** sets out the scope of the SEA, baseline data about Northamptonshire County (hereafter the County), the environmental objectives and targets of relevant other documents, key environmental issues and the assessment framework to be used to assess the Local Flood Risk Management Strategy (LFRMS); and
 - **Northamptonshire Local Flood Risk Management Strategy - Strategic Environmental Assessment Environmental Report Part 3: Results of the SEA and Proposed Monitoring Strategy** sets out the assessment methodology, the findings of the SEA of the LFRMS and reasonable alternatives, identifies the significant environmental effects of the LFRMS and proposes a strategy for monitoring significant effects.

2. PART 1: INTRODUCTION

Strategic Environmental Assessment

- 2.1 The SEA Directive¹ aims to increase the level of protection for the environment, integrate environmental considerations into the preparation and adoption of certain plans and programmes, and to promote sustainable development. The SEA Directive was transposed into English law by the the SEA Regulations².
- 2.2 The Northamptonshire LFRMS has been subject to an SEA in accordance with the SEA Regulations, because it is a water management plan that is being prepared and adopted by a public authority. Northamptonshire County Council (NCC) is currently in the process of updating the LFRMS and associated Action Plan (hereby referred to as LFRMS) for the County. The SEA considers the potential impact of the proposed updates to the LFRMS on various environmental receptors, in line with the requirements of the European Union Directive 2001/42/EC (Strategic Environmental Assessment Directive). No amendments to the existing SEA framework or monitoring strategy are proposed through the update process.
- 2.3 The SEA Regulations require that an assessment is carried out on a draft version of the plan and that an Environmental Report is produced and consulted upon. This document is the Non-Technical Summary of the SEA Environmental Report for the assessment of the updated Northamptonshire LFRMS. This summary and the Environmental Report have been produced alongside the updated LFRMS and are being published at the same time.
- 2.4 The methodology for the SEA included five main stages and iterative tasks, which include:
- Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope,
 - Stage B: Developing and refining options and assessing effects,
 - Stage C: Preparing the Environmental Report,
 - Stage D: Consulting on the draft LFRMS and the Environmental Report, and
 - Stage E: Monitoring the significant effects of implementing the LFRMS.

Further details on SEA and the methodology can be found in Sections 1 and 2 of Part 2: Scoping Report.

- 2.5 Officers from NCC have undertaken the update of the SEA. Stakeholders have been actively involved in assessing the plan and its alternatives.

The Northamptonshire Local Flood Risk Management Strategy (LFRMS)

- 2.6 Northamptonshire³ is located within the East Midlands Region of England and covers an area of over 200,000 hectares (ha).
- 2.7 Under the requirements of the Flood and Water Management Act (2010), Northamptonshire County Council, as Lead Local Flood Authority (LLFA), must 'develop, maintain, apply and monitor' a LFRMS. The LFRMS focuses on local flood risk resulting from surface water, groundwater and ordinary watercourse flooding; the interaction with main river flooding has also been assessed.
- 2.8 The Northamptonshire LFRMS sets out the Council's approach to local flood risk management in Northamptonshire, including how it will be managed in partnership with other stakeholders. The LFRMS sets out the existing situation with regards to flood risk in

¹ Council Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the 'SEA Directive')

² Statutory Instrument 2004 No. 1633: The Environmental Assessment of Plans and Programmes Regulations (2004)

³ A map of the County can be found in Section 1 of Part 2: Scoping Report

Northamptonshire and explains how local flood risk will be managed, having due regard for the measures/actions to be taken for flood reduction, response and recovery. Lead local flood authorities should look to provide a wide range of measures to manage local flooding in a co-ordinated way that balances the needs of communities, the economy and the environment.

- 2.9 The broad aim of the Northamptonshire LFRMS is to provide a framework for sustainable management of the risks and consequences of flooding, which can arise from surface run off, ground water and ordinary watercourses in Northamptonshire and surrounding areas. The objectives of the LFRMS are presented in Box 1.1 below, and further details on the Strategy can be found in Section 1 of Part 2: Scoping Report, and in the LFRMS document itself.
- 2.10 It should be noted that the scope of the update process for the LFRMS is limited, with amendments mainly relating to progress made on action items rather than alteration of the plans intent (including the plans objectives and policies).

Box 1.1: Objectives of the Northamptonshire LFRMS

1. **Collaborative Approach** – Adopt a collaborative approach to managing local flood risk by working with local partners and stakeholders to identify, secure and optimise resources, expertise and opportunities for reducing flood risk and increasing resilience to flooding;
2. **Local Flood Risk** – Develop a greater understanding of local flood risk by improving the scope of local knowledge and understanding of current and future local flood risks;
3. **Enhance the Natural and Historic Environment** – Adopt a sustainable approach to reducing local flood risk, seeking to lessen the risk of localised flooding using mechanisms that are economically viable, deliver wider environmental benefits, conserve and enhance heritage assets and their settings, and promote the wellbeing of local people;
4. **Preparedness and Resilience** – Reduce the harmful consequences of local flooding through proactive actions, activities and education programmes that enhance preparedness and resilience to local flood risk.
5. **Flood Risk and Development** – Minimise the increase in local flood risk that may arise from new development by producing guidance, setting standards and supporting the development of local polices and guidance, discouraging wherever possible surface water runoff in new and future developments and where possible influencing or supporting developments that seek to reduce existing flood risk.
6. **Economically Sustainable Approach** – Ensure the financial viability of flood related schemes through the development of appropriate policies and assessment tools to ensure that flood risk management measures provide value for money whilst minimising the long-term revenue costs. Seeking to use natural processes where possible or source the costs of any maintenance from the financial beneficiaries of the development.
7. **Riparian Responsibilities** – Encourage flood management activities by private owners of ordinary watercourses and flood defence structures as well as limit the development of constrictions on ordinary watercourses.

Habitats Regulations Assessment (HRA)

- 2.11A HRA Screening Assessment was undertaken (April 2016) and found that no further appropriate assessment was required in relation to the update of the LFRMS. However it should be noted that assessment at the strategy level does not remove the need for a

Habitats Regulations assessment at individual project level. The HRA screening report was consulted upon alongside the Northamptonshire LFRMS and the Environmental Report.

Water Framework Directive (WFD) Assessment

2.12 An initial consideration of the WFD and the LFRMS objectives suggested that the LFRMS itself did not have the potential to adversely impact on the quality of water bodies in the County and as such a WFD assessment was not required. However, the actions arising from the LFRMS could potentially have a negative impact on WFD elements/objectives and these have been assessed where practical, as part of the SEA. Part 3 of the Environmental Report provides the results of the SEA assessment.

3. PART 2: SCOPING REPORT

Scope of the SEA

- 3.1 The SEA Regulations prescribe several environmental topics that must initially be considered for all environmental assessments, taking into consideration the scope and context of any proposed plan.
- 3.2 The prescribed SEA topics include air, biodiversity (including flora and fauna), climate, cultural heritage, human health, landscape, material assets, population, soil and water; all of which were included in the scope except for air as there is no potential for LFRMS to influence issues that affect air quality. Further details can be found in Section 3 of Part 2: Scoping Report.

Review of other plans and policies

- 3.3 The SEA Directive requires information on: “*an outline of the plan or programme’s relationship with other relevant plans and programmes*”; Annex 1(a) and “*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.*” Annex 1(e).
- 3.4 An outline of the key themes identified from a review of policies, plans and programmes relevant to the LFRMS is set out in the table below. Further details can be found in Section 3 of Part 2: Scoping Report with a detailed outline of the policy documents, the objectives and targets reviewed set out in Appendix 1 of Part 2.

Table 3-1: Key Themes Identified from the Review of Other Plans, Policies and Legislation

SEA Topic	Key Themes Identified from the Review of other Policies, Plans and Strategies
Water	<ul style="list-style-type: none"> • Policy objectives centre on the safeguarding, upgrading, sustainable management and use of water resources [surface, ground, estuarine and coastal waters], with respect to quantity and quality. • Achieving significant reductions in the number water pollution incidents is of important policy consideration. • Managing flood risk and mitigating the effects of flood and drought is a vital policy objective. • Inclusion of sustainable drainage systems is an important policy consideration
Biodiversity, Flora and Fauna	<ul style="list-style-type: none"> • Legislation and policies emphasise the preservation, restoration and enhancement of habitats and species recognised as sensitive and/or needing legal protection (International and National conservation designations and protected species). • Policy objectives also highlight the importance of taking advantage of opportunities to create and foster habitat and species development, such as maintaining healthy functioning ecosystems and creating BAP habitat.
Soils	<ul style="list-style-type: none"> • The long-term protection, sustainable management and improvement of soils are recurrent themes across relevant legislation, policies and plans on soils and contaminated land. • The preservation of the best and most versatile land is an important policy consideration. • Contaminated land issues and the risks it poses to human health, property and the wider environment including long-term limitations on the use of soils, is an important policy consideration.
Climatic Factors	<ul style="list-style-type: none"> • Legislation and strategies highlight the significance of achieving reductions in carbon dioxide emissions including binding targets, and wide-reaching policies across all sectors to deliver reductions.

SEA Topic	Key Themes Identified from the Review of other Policies, Plans and Strategies
	<ul style="list-style-type: none"> Policy guidance advocates locating climate change at the core of the planning system. Requirements for adaptation to and mitigation of climate change effects and associated threats, as well as the need for increased resilience to climate change are set out.
Material Assets	<ul style="list-style-type: none"> Plans and policies set out objectives towards the improvement and sustainable development of public services, and other public utility infrastructure, including expansion and management of infrastructural networks. The creation and connection of public services and infrastructure is an important policy consideration.
Population and Human Health	<ul style="list-style-type: none"> Relevant plans and policies underline the significance of delivering Improvements to health, wellbeing and standard of living and the reduction of inequalities. Goals are set out to deliver prosperous, healthy and sustainable local communities. Provision and enhancement of public access and recreation, protection of open spaces and recreational areas is an important policy consideration.
Cultural Heritage	<ul style="list-style-type: none"> The protection, restoration and enhancement of historic assets (designated and non-designated) and their sustainable integration into current planning regimes is a recurrent key objective. Plans and policies underline the significance of improving access to the historic environment and ensuring its importance as an economic asset.
Landscape	<ul style="list-style-type: none"> Legislation and policies repeatedly highlight the importance of protecting existing sensitive landscapes (such as National Parks and AONBs), and promoting the enhancement of natural beauty and amenity of inland and coastal waters. Policies also call for the definition, protection and management of historic landscape character as well as green infrastructure provision where it provides the greatest public benefit.
Sustainable Development	<ul style="list-style-type: none"> Policies advocate that social, economic and environmental development is sustainable and beneficial to the economy, communities and the wider natural and physical environment. Plans and strategies call for the integration of socio-economic, environmental and spatial planning objective in emergent policies, plans, programmes and strategies to deliver positive robust outcomes for local people, communities and the wider environment in the present and future.

Baseline Information and Environmental Issues

Population and Human Health

3.5 In 2011, the County's population was approximately 691,900. One of the most significant risks of local flooding is that which it poses to the health and well being of local communities.

3.6 The main areas of environmental concern for the county are: the potential increased demand for water resources and pressure on the County's sewerage systems due to local population growth; an ageing population; increased single occupancy homes, particularly in smaller towns with less developed infrastructure; and development pressure linked to population growth, which may result in residential, business and community developments being built in areas at risk of flooding.

Water

- 3.7 Northamptonshire has numerous small rivers and brooks, which drain into a number of large rivers flowing through the County including the Rivers Nene, Great Ouse, Avon, Welland, Tove, Cherwell and Leam. These watercourses vary considerably in size, volume and water quality.
- 3.8 There are 87 waterbodies in Northamptonshire, with a total river length of 676.4km. Further details can be found in Section 3 of Part 2: Scoping Report, including a map of the main watercourses and a breakdown of the different types of waterbodies and their ecological, chemical, biological and hydro-morphological status.
- 3.9 The main areas of environmental concern include pressures on the quality and volume of the County's water resources⁴. These pressures result from issues such as: abstraction and other artificial flow regulation; pollution from sources such as agricultural fertilisers, sewage effluent and pesticides; pollution arising from urban areas and transport network; and un-dissolved sediments on top of or suspended within water bodies.

Biodiversity

- 3.10 The biodiversity resources in Northamptonshire include: one European Site, the Upper Nene Gravel Pits Special Protection Area (SPA) and Ramsar site; 57 Sites of Special Scientific Interest (SSSI); 2 National Nature Reserves (NNR); 18 Local Nature Reserves (LNR) and 729 Local Wildlife Sites. In comparison with other counties the land coverage of SSSI's within the County is very low (1.6%), and of those sites only 37% are in favourable condition.
- 3.11 A Biodiversity Action Plan for Northamptonshire has identified a broad range of habitat types in Northamptonshire. Ancient woodland covers 3% of the County and accounts for 36% of total woodland area, and there are 31 protected wildflower road verges. A significant number of Northamptonshire's habitats are associated with rivers and wetlands. There is variation in the riparian habitat associated with the River Nene and its tributaries, from highly engineered drainage channels, to those that are open and exposed in an agricultural landscape, denuded of bank-side trees and shrubs, to streams that remain secluded, with vegetation cover, providing corridors along which plants and animals, such as Otters and Water Voles, can move.
- 3.12 Biodiversity in Northamptonshire is under severe pressure. Most of its countryside currently consists of intensely managed arable fields of little biodiversity value. Pressures causing adverse effects on biodiversity include: changing agricultural, forestry, flood and river-management practices, urban expansion, road development, mineral extraction, pollution, water abstraction, impoundment and climate change. There has been a steady decline in semi-natural habitats with surviving areas often small, with a fragmented distribution. Further details on biodiversity can be found in Section 3 of Part 2: Scoping Report.

Landscape and Cultural Heritage

- 3.13 People have lived in the area now known as Northamptonshire for more than 10,000 years. They have left a legacy that includes buried archaeology, buildings and townscapes. Presently, the County is home to a wide variety of buildings, monuments, landscapes and settings that are designated and listed on the National Heritage List for England or undesignated, e.g. locally listed assets including entries on the Historic Environment Record (HER), owing to their special historic, architectural or archaeological interest. The destruction or modification of these landscapes, buildings and their

⁴ Anglian, Thames and Severn River Basin Management Plans

surroundings can have a considerable impact on the local heritage and cultural character within the County.

3.14 In Northamptonshire, there are 65 Scheduled Monuments, 2 Historic Battlefields, 67 Conservation Areas, 226 Listed Buildings and 5,862 other non-designated heritage assets at risk of fluvial flooding⁵. There are 114 Scheduled Monuments, 3 Historic Battlefields, 177 Conservation Areas, 792 Listed Buildings and 13,044 other non-designated heritage assets at risk of Surface Water flooding⁶. Further details can be found in Section 3 of Part 2: Scoping Report.

Soils

3.15 Soils in Northamptonshire, as with most parts of England, have suffered from degradation through unsustainable soil management, drainage and erosion by wind and rain, and through the impacts of climate change. The existing Mineral and Waste Development Core Strategy for Northamptonshire recognises these challenges in relation to soils and contains policy measures, which focus on preventing soil degradation and increasing resilience to pressures from erosion. There are equally several mineral and waste sites (current/committed) in the county that lie within the floodplain.

3.16 The vast majority of land in the County is managed for agriculture, with urban areas covering approximately 4% of land. The County's long industrial legacy is indicative of a high risk of land contamination.

3.17 Whilst a large proportion of previously developed land in the County has been redeveloped, reinstated mineral workings now characterise much of the agricultural landscape from Wellingborough to Corby. These represent a significant source of contamination to waterbodies, habitats, wildlife and human populations in the County. Equally, there still remains a significant proportion of previously developed land that remains vacant and/or derelict.

3.18 In Northamptonshire, there are a number of historic and current landfill sites and areas of made ground that are likely sources of and pathways for contamination and are potentially at risk of flooding and erosion. There is a risk that flooded historic landfills and quarries could have negative effects on water quality, especially where erosion occurs.

3.19 Climate change is likely to exacerbate many of the pressures that soils already face, for example, hotter, drier conditions make soils more susceptible to wind erosion, coupled with intense rainfall incidents that can wash soil away. Diffuse pollution from agricultural and urban land is one of the key pressures affecting water quality, as contaminated eroded soils pose a risk to waterbodies in the County.

Climatic factors

3.20 Climate change results from the emission of greenhouse gases (especially carbon dioxide CO₂) from the burning of fossil fuels. Local sources of CO₂ emission are mainly concentrated around towns and transport routes. The county's industrial and commercial sectors account for the greatest proportion of the county's CO₂ emissions (41%), with the remainder approximately evenly split between the domestic and transport sectors⁷.

3.21 Climate change projections indicate that the East Midlands region will experience changes to both temperatures and rainfall (rainfall could decrease in the summer and increase in the winter). Climate change will also result in greater fluctuation in annual

⁵ Environment Agency Flood Map for Planning: <http://www.floodtoolkit.com/risk/>

⁶ Environment Agency Risk of Flooding from Surface Water Flood Map: <http://www.floodtoolkit.com/risk/>

⁷ NI 186 CO₂ Emissions by Sector in Northamptonshire in 2005.

precipitation, which will further increase pressure on water resources. In the future climate change will place increased pressure on existing flood risk management regimes, requiring flexibility and adaptability, to be able to accommodate future changes in rainfall, river flows and storminess.

- 3.22 Climate change is expected to increase the risk of flooding within the county, in terms of the magnitude, extent and duration of flood risk. Measures to adapt to the flood risk impact of climate change are likely to put pressure on other environmental features in the County e.g. increased demand for flood defences can impact adversely on wildlife and habitats.

Material Assets

- 3.23 There is a significant risk of flooding to material assets lying within the catchment of major rivers or their tributaries. The Environment Agency flood maps show that certain urban and rural settlements lie within natural floodplains associated with the catchment of the Rivers Nene and Welland and are at risk of flood events. These risks are currently exacerbated by other threats associated with climate change, for example erratic heavy rainfall and snowfall. In recent times, the most significant flooding event in Northamptonshire occurred in 1998, affecting Northampton and surrounding villages, and which resulted in loss of life, and an estimated 4,200 properties affected, causing over £75 million worth of damage.
- 3.24 Flood mapping for the Northamptonshire Local Flood Risk Management Strategy suggest that there are currently approximately 4,700 residential properties at risk of fluvial flooding and 57,000 residential properties at risk of surface water flooding in the County. Similarly, there are 21,000 properties at risk of groundwater flooding.

4. PART 3: SEA ENVIRONMENTAL ASSESSMENT

- 4.1 The SEA framework provides a set of agreed objectives and sub-objectives against which the updated LFRMS and its alternatives were assessed. The existing SEA framework has not been amended for the purpose of this update process as it is considered fit for purpose and to do so would not value-add to the process or prove an efficient approach.
- 4.2 Given that the SEA relates to amendments resulting from the update of the adopted LFRMS the reasonable alternatives considered were limited to the business as usual (BAU) scenario. In some cases the BAU scenario was not applicable as: (1) the updated direction stemmed from further investigations being undertaken (based on the BAU scenario) and so effectively act as an extension of the adopted intent; or (2) the update of the document involved removing action items as these had been completed, absorbed into other projects (as this was determined to be a more appropriate vehicle for delivery), or are no longer intended to be taken forward. In such cases the update of the SEA acts more as an administrative amendment process rather than actual assessment. An assessment of the alternatives making a relative comparison between them, and with reference to the baseline evidence, was undertaken using the SEA objectives of the Assessment Framework.
- 4.3 The preferred options (being the amendments proposed through the update) for the LFRMS were then subject to assessment against the SEA Framework where appropriate. Previous SEA examined whether and how well the SEA questions in the SEA Framework were addressed by the policies; no amendments to the LFRMS objectives or policies are proposed and so no amendment to the previous SEA outcome has been made. Rather than using a conventional scoring system (e.g. ++ / -- etc.), a more descriptive approach was used. This provided an indication of the importance of the impact, some sense of scale and an idea of the likely sensitive receptors. This is how the significance of potential impacts was described and identified. Wherever possible, baseline data, references and evidence were provided to support the assessment.
- 4.4 The updated LFRMS and associated documents (including the SEA) was consulted on for a 6 week period from 16th June 2016 to 28th July 2016. Consultation included the statutory SEA consultees, other key stakeholders and the public. All comments received have been reviewed with amendments made to the LFRMS and associated documents where considered necessary and appropriate.

SEA Objectives and SEA Framework

- 4.5 The SEA Framework comprises SEA objectives and SEA assessment criteria and shows how these address the key environmental issues identified for the area. No amendments are proposed to the SEA Framework as part of the update process. The SEA framework is set out in Section 2 of Part 3: Environmental Report.

Possible Conflicts between the objectives of the LFRMS and SEA

- 4.7 The broad aims of the LFRMS, to manage and reduce the risks and consequences of flooding, have the potential to conflict with the SEA objectives to protect biodiversity, soil, landscape and cultural heritage. Identification of potential incompatibilities was undertaken previously to support development of the SEA Framework and LFRMS objectives and enabled the SEA objectives to be taken into consideration by the LFRMS. It was determined that the potential incompatibilities were more likely to be realised at the project level. Possible conflicts between the objectives of the LFRMS and SEA are detailed in Section 4 of Part 2: Scoping Report.

Developing and assessment of alternatives

- 4.8 Due to the relatively prescriptive nature of the Flood and Water Management Act (2010), the purpose and content of the LFRMS is clearly defined and this means that there is limited scope for the consideration of radical alternatives. The scope for subsequent updates to the LFRMS is again limited relating to progress made on action items rather than alteration of the plans intent (i.e. objectives and policies). However, at points through the development of the LFRMS certain decisions have been made where alternatives could be identified. Checks have been made to make sure that the preferred alternative selected does not have significant negative effects on the SEA objectives, and where necessary mitigation has been included within the preferred alternative.
- 4.9 A summary of the alternatives considered, their relative performance against the SEA objectives and any mitigation measures considered is set out in Section 3 of Part 3: Environmental Report. Alternatives considered previously through the SEA process include:
- Using either locally or nationally derived strategic objectives;
 - Different funding mechanisms;
 - Different ways of delivering the consenting services;
 - Different definitions of 'significance' for a flooding event, and
 - Different thresholds to triggering investigations into flooding.
- 4.10 Consideration has also been given to whether there were any reasonable alternatives for the actions/projects included within the LFRMS Action Plan. The assessment of the Action Plan is summarised in Section 4 of Part 3: Environmental Report, and the full assessment can be found in Appendix A of Part 3. This includes a consideration of alternatives where practical.

Assessing effects

- 4.11 The assessment of the preferred option for the LFRMS against the SEA Objectives within the SEA Framework has been broken down into three parts including assessment of the LFRMS Strategy Objectives, Consenting Policies, and Action Plan.
- 4.12 Previous SEA has involved assessment of the LFRMS Strategy Objectives and the Consenting Policies against the SEA Objectives within the SEA Framework; this also included the adopted Action Plan. A summary of the previous assessment is included in Section 4 of Part 3: Environmental Report for ease of reference. The purpose of the update to the SEA is to assess amendments made to the LFRMS including the Action Plan against the SEA Framework.
- 4.13 Amendments made to the LFRMS involved updating of the policy context, updating to reflect completed work/status of projects (including new actions), removal of guidance/good practice, removal of content migrated to related project and reports, data updates (e.g. baseline information) and partnership or administrative arrangements. Material removed that related to guidance/good practice now makes up the NCC Flood Toolkit (<http://www.floodtoolkit.com/>), which forms a library of living guidance documents on flood risk matters. This action was taken to enable more efficient updating of guidance information. It is not possible, or necessary, to assess these types of amendments through the SEA process.
- 4.14 No amendments to the LFRMS objectives and policies are proposed, in addition much of the content is being rolled forward unchanged; as such further assessment of these components is not required. No other parts of the LFRMS were identified as being possible to assess, as they relate to, for example, partnership or administrative arrangements.

Assessment of Strategy Objectives

- 4.15 A summary of the assessment of LFRMS Strategy Objectives against the SEA Objectives can be found in Section 4 of Part 3: Assessment of the Environmental Report with the full assessment set out in Appendix 1 of Part 3. No amendments to the LFRMS objectives are proposed through the LFRMS update process.
- 4.16 Previous assessment determined that the Strategy Objectives already adequately covered some SEA Objectives. Where the assessment found objectives within the SEA framework that were not being adequately addressed by the LFRMS Strategy Objectives, mitigation measures were put forward. Taking these mitigation measures into account, the assessment concluded that no negative and uncertain effects remain.

Assessment of Consenting Policies

- 4.17 No amendments to the LFRMS consenting policies are proposed through the LFRMS update process. Previous assessment sought to identify whether positive or negative effects could occur as a result of the consenting policies of the LFRMS. Potential effects of the consenting policies on the SEA Objectives of Population & Human Health, Water, Climate and Material Assets were identified as positive. However, a number of potential negative and uncertain effects on the SEA Objectives of Biodiversity, Landscape & Cultural Heritage and Soils were identified. Mitigation measures were agreed for these and the assessment concluded that no negative and uncertain effects remain. Further details can be found in Section 4 of Part 3: Environmental Report with the full assessment set out in Appendix 1 of Part 3.

Assessment of Action Plan

- 4.18 Further details on assessment of the Action Plan can be found in Section 4 of Part 3: Environmental Report with the full assessment set out in Appendix 1 of Part 3.
- 4.19 A traffic light key was used in the assessment to categorise the actions and identify those that could potentially lead to potential negative environmental effects: green = no negative environmental effects anticipated; orange = potential negative effects could occur; and red = negative environmental effects are likely to occur.
- 4.20 The majority of the actions items within the Action Plan were categorised as 'amber'. This is because there is the potential for negative effects to occur as a result of implementation of individual action items, however there is insufficient information to hand given the early stage of the action item/project to identify what the effect/s might be and their magnitude, location, timing, etc. A project checklist was developed to ensure that there is sufficient information to determine whether the action is likely to be compliant with the Habitats Regulations, Water Framework Directive and SEA objectives. The checklist is to be applied to the adopted actions, plus any new actions that are to be included as part of each annual review of the Action Plan.
- 4.21 Actions within the Action Plan that are of an administrative nature were mainly categorised as 'green' meaning that they would not result in negative environmental effects. This applies to all of the actions relating to Objectives 1, 3, 5 and 6.
- 4.22 A small number of actions within the Action Plan were categorised as 'red' meaning that that negative environmental effects are likely to occur which will require mitigation. This relates mainly to actions/projects for which sufficient information is available about what is planned to take place and the information allows the identification of negative effects. Where this is the case, it has not always been possible to put forward mitigation measures because it is not within the remit of NCC to enforce the mitigation because either the action/project is the responsibility of another party, or mitigation will be put in

place through other processes e.g. Environmental Impact Assessment and the planning consent process.

4.23 A number of recommendations and mitigation measures have been put forward through the SEA. The response to these measures by NCC is detailed in Section 4 of Part 3: Environmental Report.

Potential significant residual effects

4.24 The LFRMS is likely to result in a number of positive effects for the SEA Objectives (refer Appendix 1 of Part 3: Environmental Report).

4.25 However, there is so much uncertainty identified within the assessment of the Action Plan that cannot be mitigated at this stage, that there are a number of uncertain negative effects, which could occur as a result of the LFRMS. The potential significant negative effects are listed below. These effects could potentially occur in both the long and short term:

- Uncertain negative effects on biodiversity, flora and fauna, including destruction and fragmentation of riparian habitats, alteration of bank structure and disturbance of related fauna species from projects which require consent and from actions/projects within the Action Plan. Such effects could be temporary and permanent. This could potentially be a Water Framework Directive compliance issue;
- Uncertain temporary negative effects on water quality from engineering works, from increased sediment movement/turbidity. This could potentially be a Water Framework Directive compliance issue; and
- Uncertain temporary or permanent effects on the condition and settings of historic assets at risk of flooding and in close proximity to ordinary watercourses from projects that require consent and from actions/projects within the Action Plan.

4.26 The project checklist was identified as a mitigation measure in order to ensure that information is made available in order to assess whether actions within the Action Plan or considered for addition to the Action Plan, could have significant environmental effects, as listed above. The project checklist and its recommended application have not been amended through the update of the LFRMS. Many of the actions are not the responsibility of NCC and it is therefore intended that this checklist be used to support the consideration of potential environmental and WFD effects.

Monitoring Strategy

4.27 The SEA Directive requires that the responsible authority “monitor the significant environmental effects of the implementation of plans”. Previous SEA identified a monitoring framework that links the predicted impacts, effects and monitoring indicators. An amendment to the monitoring strategy is proposed to align it with work completed; specifically the monitoring framework relating to Objective 3 Cultural Heritage – the parameter addressing condition of heritage assets and potential effects of flood risk has been deleted as the related action item was completed in 2015 with outcomes factored into the prioritisation methodology. As such the related monitoring parameter has been removed from the monitoring strategy. No other amendments are proposed to the current monitoring framework. Implementation of the monitoring framework assists the responsible authority to determine at the earliest opportunity if any adverse effects are occurring as a result of the implementation of the LFRMS. The monitoring framework is set out in the table below.

4.28 Some of these will remain outside the remit of NCC and therefore Officers will have to work closely with partners in order to keep up to date with these outputs. With regards to the potential negative effects identified within the Action Plan, NCC will take responsibility

for the on-going monitoring of these effects and any other unforeseen effects as the schemes come forward through the Action Plan. NCC will also take responsibility for ensuring that any effects that are shown by the monitoring results to be of concern are addressed. The Action Plan is linked to the County Council's Outcome Plan - A cleaner, greener and more prosperous county, which is monitored annually.

4.29 The flood risk prioritisation methodology will be updated annually and will reassess any environmental and historic designations at risk of flooding. Through working with Natural England, the local Wildlife Trust and Historic England appropriate measures will be explored to reduce any risks. Therefore, with relation to the potential negative effects related to cultural heritage, should these effects be identified through the on-going monitoring, NCC will consult with Historic England and appropriate site specific mitigation measures developed on a case-by-case basis.

Table 4-1: LFRMS Monitoring Framework

SEA topic	Potential negative effect	Monitoring indicator (and period)	Partners for monitoring
Water	Reduction in water quality from engineering works relating to actions within the Action Plan Engineering works relating to the action plan also have the potential to impact WFD through the ecological status of water bodies. For example, destruction and fragmentation of riparian habitats, alteration of bank structure and disturbance of related fauna species etc.	Condition of water bodies in Northamptonshire (annual). Ecological and chemical status of water bodies (annual).	NCC, EA and Borough and District councils.
Biodiversity, flora and fauna	Decrease in biodiversity from engineering works relating to actions within the Action Plan and projects requiring consent	Conformity with Biodiversity Action Plan targets and objectives (annual). Changes in condition of designated and recognised sites (annual). Requirements for habitat compensation arising out of the LFRMS (developed as part of scheme development and then monitored on an annual basis through the Action Plan). Number of flood defence schemes implemented to protect designated and non-designated biodiversity rich sites, since the LFRMS was published (developed as part of scheme	NCC, Wildlife Trust, Natural England, Internal Drainage Board(s), EA and the Borough and District councils.

SEA topic	Potential negative effect	Monitoring indicator (and period)	Partners for monitoring
		development and then monitored on an annual basis through the Action Plan). Ecological and chemical status of water bodies (annual).	
Cultural heritage	Increase in number of heritage assets (designated and non-designated at risk of flooding due to climate change	Number of heritage assets at risk of flooding events (updated with flood mapping and then checked annually).	NCC, Historic England and the Borough and District councils.

Difficulties Encountered in Undertaking the SEA

4.27 The identification of alternatives has been difficult because the purpose, content and scope of the LFRMS update is relatively prescriptive. This is discussed further in Section 3 of Part 3: Environmental Report.

4.28 Identifying the potential effects of some of the actions within the Action Plan has been difficult because a number of the actions either relate to studies which are being or will be undertaken or relate to maintenance works to infrastructure, such as new and replacement culverts, but the action to be taken has not yet been identified. In the case of on-going or planned studies, the studies themselves are unlikely to have environmental effects, however, actions identified through or following the studies may require site-specific environmental assessment to identify potential significant environmental effects. In addition, it has not been possible to consider the impact of the actions of the Water Framework Directive and that following studies may need specific WFD assessments. For infrastructure works identified as required but where information is not yet available about the works that could be proposed, potential uncertain and negative effects have been identified in all cases.

4.29 It has also not been possible to identify mitigation or future remedial actions to be taken for some of the actions within the Action Plan for which NCC does not have responsibility and in these circumstances NCC will work with the relevant partners. In such cases, potential action, such as the need to assess the environmental impacts of options, has been stated as being required.

5. SUMMARY OF PAST CONSULTATION ON THE ENVIRONMENTAL REPORT AND DRAFT LFRMS

- 5.1 The Environmental Report accompanies the SEA undertaken for the LFRMS and subsequent updates since adoption in 2012. All previous and current SEA documents have been consulted on in line with regulatory requirements and involved the statutory SEA consultation bodies, other key stakeholders and the public. Comments received were taken into consideration in the preparation of the final version(s) of the current Northamptonshire LFRMS with the Environmental Report updated accordingly.

6. NEXT STEPS

- 5.2 This Environmental Report (of which this document forms a part) is the draft report, which accompanies the updated LFRMS. It is published and available to view and download on the NCC Flood Toolkit web page <http://www.floodtoolkit.com/pdf-library/>.
- 5.3 The updated SEA Scoping Report and Environmental Report was consulted on for a 6 week period from 16th June 2016 to 28th July 2016, alongside the updated LFRMS. Consultation included the statutory SEA consultees, other key stakeholders and the public. All comments received have been given due consideration and amendments made where considered appropriate in preparing the final SEA and LFRMS documents.