

# Buckinghamshire Local Flood Risk Management Strategy

## Strategic Environmental Assessment Post-Adoption Statement

Final Report

October 2024

Prepared for:  
Buckinghamshire Council

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# Contents

<b>Executive Summary</b>	<b>vi</b>
<b>1 Introduction</b>	<b>1</b>
1.1 Background to LFRMS	1
1.2 Background to SEA	1
1.3 Requirement for the SEA Post-Adoption Statement	2
<b>2 How have environmental and sustainability considerations been integrated into the Buckinghamshire LFRMS?</b>	<b>2</b>
<b>3 How has the Environmental Report been considered?</b>	<b>4</b>
<b>4 How have opinions of consultation bodies and the public been considered?</b>	<b>6</b>
4.1 SEA Scoping consultation (August - September 2023)	6
4.2 SEA Environmental Report consultation (November - December 2023)	7
<b>5 Reasonable alternatives</b>	<b>7</b>
<b>6 How will the environmental and sustainability effects be monitored?</b>	<b>8</b>

## List of Tables

Table 2-1: SEA Framework for the Buckinghamshire LFRMS.	3
Table 3-1: Stages in the SEA process.	4
Table 6-1: Monitoring indicators and monitoring partners for each SEA Objective.	8

## Abbreviations

FCERM	Flood and Coastal Erosion Risk Management Strategy
LFRMS	Local Flood Risk Management Strategy
LLFA	Lead Local Flood Authority
ODPM	Office of the Deputy Prime Minister
PRoW	Public Rights of Way
SAB	SuDS Approval Body
SEA	Strategic Environmental Assessment
SuDS	Sustainable Drainage System
WFD	Water Framework Directive

## Definitions

Term	Definition
Flood and Coastal Erosion Risk Management Strategy	The strategy describes what needs to be done by all risk management authorities involved in flood and coastal erosion risk management for the benefit of people and places.
Local Flood Risk Management Strategy	Strategies produced by lead local flood authorities, considering local issues and policy. It should also consider the extent and severity of flood risk and the geography of the authority area including the environmental or social setting
Lead Local Flood Authority	Councils and Unitary Authorities which lead in managing local flood risks.
Natural Flood Management	Natural flood management involves balancing and integrating the restoration of natural features and processes with existing land uses. It does not therefore involve large scale land set aside but seeks to provide additional protection and climate proofing where defences are vital or already exist.
Strategic Environmental Assessment	Strategic Environmental Assessment is a decision support process which aims to promote sustainable development by assessing the extent to which the emerging plan will help achieve relevant environmental, economic, and social objectives.
SuDS Approval Body	A service to be delivered by Local Authorities to ensure that drainage proposals for new developments are fit for purpose, designed, and built in accordance with national standards. The service is likely to come into effect from 2024.
Water Framework Directive	The Water Framework Directive is a European Union directive transposed into UK law through The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. It aims to prevent deterioration of the water environment and improve water quality.

# Executive Summary

## Overview

The Flood and Water Management Act (2010) determined the need for flood risk to be managed within the framework of National Strategies for England and Wales and within Local Strategies for each Local Flood Authority Area.

Lead Local Flood Authorities (LLFAs), which include Buckinghamshire Council, are required to produce a Local Flood Risk Management Strategy (LFRMS). The aim of a LFRMS is to guide the management of local flood risk, reflecting local circumstances such as the level of risk and the potential impacts of flooding. Buckinghamshire's updated LFRMS must assess local flood risk, set out measures for managing local flooding and determine the costs and benefits associated with the implementation of such measures.

Buckinghamshire's previous LFRMS was adopted in 2017, and it was outlined that a review would be undertaken in 2022. Since the previous LFRMS was produced, there have been national legislation and policy changes which have influenced local flood risk management in Buckinghamshire. Primarily, the updated National Flood and Coastal Erosion Risk Management (FCERM) Strategy, published in 2020, and the associated FCERM Strategy Roadmap to 2026, published in 2022. There were also several emerging changes which came into effect during the period of the revised LFRMS including the updated National Planning Policy Framework in 2021 and 2023. The NPPF now embeds flooding and coastal change within the goals to transition to a low carbon future in planning developments. The enactment of Schedule 3 of the Flood and Water Management Act (2010) is expected in 2024 which means Buckinghamshire Council will become a Sustainable Drainage Systems (SuDS) Approving Body (SAB). In any event, the knowledge of the broad nature and extent of flood risk across Buckinghamshire has grown since the previous LFRMS was produced.

An updated LFRMS has since been produced, which Buckinghamshire Council adopted as its LFRMS in September 2024 and should be updated at a minimum every six years, or sooner as required. The Strategy's next review is to be in 2028 with the Action Plan reviewed annually.

## Strategic Environmental Assessment

When preparing a flood management plan that will inform decision making and identify actions to be taken to reduce the risk of flooding, it is a statutory requirement to conduct a Strategic Environmental Assessment (SEA) in accordance with The Environmental Assessment of Plans and Programmes Regulations 2004 ('the SEA Regulations'). Due to the scale of the changes proposed in the updated LFRMS and the potential for significant environmental effects, it was considered appropriate that an SEA be undertaken.

The way in which the environmental and sustainability effects of the LFRMS were described, assessed, and compared was through the SEA Framework comprising a set of SEA objectives and SEA assessment criteria. The SEA Framework and SEA objectives were based on identified local environmental issues identified throughout Buckinghamshire

and further developed and amended in accordance with the consultation responses received.

The SEA Framework comprised eight SEA objectives (landscape and visual amenity, biodiversity, water environment, heritage, geology and soils, population and human health, material assets and climate change) and nine SEA topics that were used to determine what the likely effects of the LFRMS would be. The SEA objectives provided the main tools at each stage of the SEA for assessing the objectives and measures in the LFRMS. All SEA topics were covered by one SEA objective apart from 'air quality', which was scoped out of the assessment as it was unlikely that the LFRMS would have a significant effect on air quality.

At points throughout the development of the LFRMS certain decisions were made which had alternative options. Therefore, the SEA Report included three alternative management approaches for the LFRMS. These were 'do nothing', 'maintain current LFRMS', and 'manage and reduce local flood risk'. Checks have been made so that the preferred option does not have significant negative effects on the SEA objectives, and where necessary mitigation measures have been included.

The updated LFRMS (adopted in September 2024) was subject to an SEA which was undertaken alongside the LFRMS. The LFRMS and each stage of the supporting SEA were subject to the relevant statutory consultation periods to allow members of the public and statutory consultees the opportunity to comment, as appropriate.

The final LFRMS was approved for adoption in September 2024. The final SEA Environmental Report to support this LFRMS included proposals for how the potentially significant environmental effects identified for the LFRMS in the Action Plan should be monitored. These are outlined further in this post adoption statement.

# 1 Introduction

## 1.1 Background to LFRMS

The Flood and Water Management Act 2010 gave local authorities a new role to manage local flood risk in their area. The Act requires Lead Local Flood Authorities (LLFAs), which include Buckinghamshire Council, to produce a Local Flood Risk Management Strategy (LFRMS). This was supported by the National Flood and Coastal Erosion Risk Management Strategy for England, initially published by the Environment Agency in 2011 and revised and updated in 2020, which sets out principles for flood risk management and which organisations are responsible for their implementation.

The aim of a LFRMS is to guide the management of local flood risk, reflecting local circumstances such as the level of risk and the potential impacts of flooding.

Buckinghamshire's previous LFRMS was adopted in 2017, and it was outlined that a review would be undertaken in 2022. Since the previous LFRMS was produced, there have been national legislation and policy changes which have an influence on local flood risk management in Buckinghamshire. Primarily, the updated National FCERM Strategy, published in 2020, and the associated FCERM Strategy Roadmap to 2026, published in 2022. There were also several emerging changes which came into effect during the period of the revised LFRMS including the updated National Planning Policy Framework in 2021 and 2023. The NPPF now embeds flooding and coastal change within the goals to transition to a low carbon future in planning developments. The enactment of Schedule 3 of the Flood and Water Management Act (2010) is expected in 2024 which means Buckinghamshire Council will become a Sustainable Drainage Systems (SuDS) Approving Body (SAB). In any event, the knowledge of the broad nature and extent of flood risk across Buckinghamshire has grown since the previous LFRMS was produced.

Buckinghamshire's updated LFRMS was therefore required to address the emerging changes as outlined above and has now adopted its updated LFRMS as Council policy.

## 1.2 Background to SEA

When preparing a flood management plan that will inform decision making and identify actions to be taken to reduce the risk of flooding, it is a statutory requirement to conduct a Strategic Environmental Assessment (SEA) in accordance with The Environmental Assessment of Plans and Programmes Regulations 2004 ('the SEA Regulations'). Due to the scale of the changes proposed in the updated LFRMS, and the potential for significant environmental effects, it was considered appropriate that an SEA be undertaken.

Buckinghamshire commissioned JBA Consulting to undertake the SEA alongside officers from the County Council. The method and findings of the SEA were described in the SEA Environmental Report, which was published alongside the draft and final versions of the LFRMS as it was developed in 2023.



### 1.3 Requirement for the SEA Post-Adoption Statement

The SEA Regulations require a number of steps to be taken upon adoption of a plan or strategy (in this case the Buckinghamshire LFRMS). Specifically, Regulation 16 sets out the post-adoption procedures for the SEA and requires that, as soon as is reasonably practical after the adoption of a plan or strategy for which SEA has been carried out, the planning authority must make a copy of the plan or strategy publicly available alongside a copy of the SEA report and an SEA post-adoption statement and must inform the public and statutory consultation bodies about the availability of these documents. The SEA post-adoption statement must explain:

- How environmental (and sustainability) considerations have been integrated into the plan/strategy.
- How the Environmental Report has been considered during preparation of the plan/strategy.
- How the opinions expressed by the public and consultation bodies during consultation on the plan and Environmental Report have been considered.
- How the results of any transboundary consultations entered into have been considered.
- The reasons for choosing the plan / strategy as adopted, in the light of the other reasonable alternatives.
- The measures that are to be taken to monitor the significant environmental and sustainability effects of the implementation of the plan/strategy.

The remainder of this SEA adoption statement will detail how each of these requirements has been met.

## 2 How have environmental and sustainability considerations been integrated into the Buckinghamshire LFRMS?

JBA Consulting was appointed in December 2022 to undertake the SEA of the LFRMS on behalf of Buckinghamshire Council. The purpose of the SEA was to assist Buckinghamshire Council in preparing the LFRMS by identifying the key relevant sustainability/environmental issues facing the council area, to predict the likely effects of the LFRMS on these issues and to outline recommendations to improve the LFRMS. The aim was to ensure that potentially significant environmental impacts of strategy implementation were identified and avoided or mitigated during plan preparation.

The SEA was fully integrated into the development of the LFRMS. At each stage of the LFRMS development, an assessment of the sustainability and environmental effects of the measures included in the document was carried out. These assessment findings were reported in the SEA Environmental Report, which was produced to show how the SEA had influenced the LFRMS process, describe the approach taken, identify the likely effects, and

put forward recommendations to avoid or minimise the negative effects identified. Where possible, the SEA also identified opportunities for environmental enhancement as well as mitigating potential adverse effects of the LFRMS.

The way in which the environmental and sustainability effects of the LFRMS were described, analysed, and compared was through the use of an SEA Framework comprising a set of SEA objectives and SEA assessment criteria. The SEA Framework and SEA objectives were developed during the SEA Scoping stage and were based on identified local environmental issues throughout Buckinghamshire. The SEA Framework and SEA objectives were outlined within the SEA Scoping Report which was issued to statutory consultees (Historic England, Natural England and the Environment Agency) in August 2023 for their review and comment. The SEA Framework and SEA objectives were further developed and amended in accordance with the consultation responses received.

The SEA Framework comprised eight SEA objectives that were used to determine what the likely effects of the LFRMS would be. The SEA Framework for the LFRMS is shown in Table 2-1 below. The SEA objectives provided the main tools at each stage of the SEA for assessing the objectives and measures in the LFRMS. All SEA topics were covered by one SEA objective apart from 'air quality', which was scoped out of the assessment. Air quality was not included because the SEA is required to identify significant effects, and it was considered at the scoping stage that it was unlikely that the LFRMS would have a significant effect on air quality.

Table 2-1: SEA Framework for the Buckinghamshire LFRMS.

Receptor	Objective
Landscape and visual amenity	Protect the integrity of local urban and rural landscapes in the area.
Biodiversity, flora and fauna	Maintain and enhance biodiversity, wildlife, and habitat connectivity.
Water environment	Protect and enhance the quality of water features and resources.
Geology and soils	Maintain soil quality and conserve geological designations.
Historic environment	Preserve and where possible enhance important historic and cultural sites.
Population and human health	Protect and enhance human health and wellbeing.
Material assets	Minimise the impacts of flooding to the transport network and key critical infrastructure.
Climate change	Minimise local and national contribution to climate change.

In addition to the SEA Framework above, the SEA was developed alongside the LFRMS and has therefore been used to inform sustainable decision making throughout.

### 3 How has the Environmental Report been considered?

The methodology for the SEA of the Buckinghamshire LFRMS was informed by the Government's best practice guidance (ODPM, 2005) and was undertaken iteratively in that it included five main stages and iterative tasks such that an assessment of its sustainability and environmental effects was carried out at several stages of the LFRMS development. This allowed recommendations to be put forward at different stages, to avoid or minimise negative effects and enhance positive effects. Buckinghamshire Officers then took the SEA findings and recommendations into account while making changes to the LFRMS at each stage.

Table 3-1 below shows how the preparation of the SEA corresponded with the development of the LFRMS. It also includes the different SEA Stages and SEA tasks, and how any recommendations were considered.

Table 3-1: Stages in the SEA process.

Date	SEA Stages	SEA Tasks
August - September 2023	<b>Stage A: Setting the context and objectives, establishing the baseline, and deciding on the scope.</b> The Scoping Report was produced and shared with the statutory consultees, Natural England, Historic England and the Environment Agency. As outlined under the Environmental Assessment of Plans and Programmes Regulations 2004, the consultation period was for a period of five weeks from Thursday 3rd of August to Thursday 7th September 2023. Following the receipt of comments, the Scoping Report was updated in accordance with the comments received. Comments mainly related to baseline data included and requests to include additional information, such as increasing emphasis on the importance of chalk streams.	A1: Identifying other relevant policies, plans and programmes, and environmental protection objectives.
		A2: Collecting baseline information.
		A3: Identifying environmental issues.
		A4: Developing the SEA objectives and framework.
		A5: Consulting on the scope of the SEA.

Date	SEA Stages	SEA Tasks
September - November 2023	<p><b>Stage B: Developing and refining options and assessing effects.</b></p> <p>Following consultation on the SEA Scoping Report, the SEA Framework (detailed in Table 2-1) was amended in accordance with the consultation responses received.</p> <p>Taking into consideration the SEA framework and objectives, an assessment of reasonable alternatives to the updated LFRMS was undertaken, making a relative comparison between them, and to the baseline evidence. The preferred option for the draft LFRMS was subject to assessment against the SEA Framework and the significant potential impacts were described and identified. Wherever possible, baseline data, references and evidence were provided to support the assessment. These outcomes were shared with Buckinghamshire Council for consideration in the strategy's development.</p>	
September - November 2023	<p><b>Stage C: Preparing the Environmental Report.</b></p> <p>Following on from Stages A and B, the Environmental Report was then drafted from September to November 2023 with the final draft document produced in November 2023. It outlined the likely significant effects of the LFRMS and set out a proposed strategy for monitoring these significant effects.</p> <p>This Stage was revisited where required after the consultations undertaken as part of Stage D of the SEA process.</p>	
November - December 2023	<p><b>Stage D: Consulting on the draft LFRMS and the Environmental Report.</b></p> <p>The LFRMS was consulted on from 6th November to 20th November 2023 with the council's key partners and key community groups likely to be affected. This included local flood community groups in Chalfont St Peter, Marlow and Colnbrook Poyle. Minor amendments were made to the LFRMS in response to comments received. None of the changes were deemed to be significant and therefore further assessment to identify whether they would result in significant effects was not required.</p>	
Ongoing	<p><b>Stage E: Monitoring the significant effects of implementing the LFRMS.</b></p> <p>A monitoring framework has been put in place that links the predicted impacts, effects, and monitoring indicators. Once implemented, this should enable the responsible authority to determine at the earliest opportunity if any adverse effects are occurring as a result of the implementation of the LFRMS.</p>	

## 4 How have opinions of consultation bodies and the public been considered?

At each stage of the SEA of the Buckinghamshire LFRMS, the relevant reports were published for consultation with the consultation bodies specifically relating to the SEA Directive (Historic England, Environment Agency, and Natural England), and the public where appropriate. The SEA Regulations require the SEA Adoption Statement to summarise how any opinions expressed by the public and the consultation bodies about the SEA have been considered.

The LFRMS consultation stages and consultation responses received relating to the SEA Reports are summarised below.

### 4.1 SEA Scoping consultation (August - September 2023)

JBA Consulting produced the SEA Scoping Report for the LFRMS which was shared with Buckinghamshire Council. As well as describing the background to the LFRMS and the requirement for SEA, it set out the relevant baseline information, review of relevant plans and programmes and the proposed SEA Framework.

The SEA Scoping Report was sent to the three statutory consultation bodies for a five-week consultation period between August and September 2023. Comments were received from the Natural England, Historic England and the Environment Agency. The Environment Agency team for the Thames area also provided comments separately.

The comments included suggestions of additional plans and programmes that should be reviewed and considered, and additional baseline information that it would be useful to include.

The Environment Agency advised of a series of plans, policies and programmes to be considered particularly in relation to chalk stream restoration. The Environment Agency requested more emphasis on chalk rivers/streams and their restoration, as well as the creation of habitats. A sub-objective was therefore added to the SEA Framework to 'mitigate climate change through habitat creation and restoration, particularly rivers and wetlands.' The Environment Agency's Thames team also provided comment mostly relating to minor amendments to text and Figures, and the consideration of natural flood management measures.

Natural England confirmed they were satisfied with the scope, contents and methodology of the proposed SEA report, and had no specific further comments to make. Natural England also advised of plans that should be included as part of the SEA assessment.

Historic England confirmed that the SEA scoping report provided the basis for the development of an appropriate framework for assessing the significant effects which the LFRMS might have upon the historic environment. Historic England however also suggested the consideration of how flood risk management measures implemented through the LFRMS may impact heritage assets and buried archaeological remains.

These comments were addressed in updated versions of the review of plans and programmes, and the additional baseline information included in the first iteration of the full SEA Report.

#### 4.2 SEA Environmental Report consultation (November - December 2023)

The SEA Environmental Report was produced between September and November 2023. This included the assessment undertaken as part of Stage B of the SEA. The LFRMS and SEA Environmental Report was consulted on from 6th November to 20th November 2023 with the council's key partners and community groups likely to be affected. This included local flood community groups in Chalfont St Peter, Marlow and Colnbrook Poyle. Minor comments were received on the draft LFRMS in relation to formatting and wording changes, which Buckinghamshire Council updated as required.

No comments were received on the SEA.

## 5 Reasonable alternatives

The purpose and content of the LFRMS is clearly defined by the Flood and Water Management Act 2010 and this means that there is limited scope for the consideration of alternatives. However, at points throughout the development of the LFRMS, certain decisions have been made where there were alternative options available. Checks have been made to make sure that the preferred option did not have significant negative effects on the SEA objectives, and where necessary, mitigation measures have been included.

The SEA Report included three alternative management approaches for the LFRMS. These were 'do nothing', 'maintain current LFRMS', and 'manage and reduce local flood risk'. The assessment reached the following conclusions:

- **Do nothing:** where no action is taken, and existing assets and ordinary watercourses are abandoned.
- **Do minimum - maintain current Buckinghamshire Council Local Flood Risk Management Strategy (2017):** existing assets and watercourses are maintained as present in line with the existing local flood risk management plan as an alternative to preparing a new one. Existing infrastructure is not improved over time and the effects of climate change are not considered.
- **Manage and reduce local flood risk:** take action to reduce the social, economic, and environmental impact due to flooding through the preparation of a new LFRMS.

Table 7-1 in Chapter 7 of the final SEA Environmental Report (November 2023) provides the full details of the "Assessment of the Strategy and Alternative Options Against the SEA Objectives" and explains the reasoning behind selection or rejection of these.



## 6 How will the environmental and sustainability effects be monitored?

The SEA Regulations require that “the responsible authority shall monitor the significant environmental effects of the implementation of each plan or programme with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action” (Regulation 17), and that the environmental report should provide information on “a description of the measures envisaged concerning monitoring” (Schedule 2).

It is not necessary to monitor every potential effect of the LFRMS. SEA monitoring should be focussed on the significant environmental and sustainability effects that may give rise to irreversible damage (with a view to identifying trends before such damage is caused) and the significant effects where there is uncertainty in the SEA and where monitoring would enable preventative or mitigation measures to be taken.

No likely significant negative effects were identified in relation to the LFRMS. The majority of the LFRMS objectives and actions are likely to have indirect beneficial effects upon the environment as they relate to enhanced understanding and awareness of flood risk along with high-level flood risk management measures. Potentially significant positive effects were identified overall in relation to all of the SEA objectives. The LFRMS objectives are likely to have indirect beneficial effects upon the environment as they relate to enhanced understanding and awareness of flood risk along with high-level flood risk management measures rather than individual actions. Furthermore, embedding the community engagement and resilience learnings from Project Groundwater will be particularly beneficial for population and human health.

Chapter 9 of the November 2023 SEA Environmental Report for the LFRMS includes proposals for how the potential significant environmental effects identified for the LFRMS in the Action Plan could be monitored and the possible monitoring partner, as shown in Table 6-1.

Table 6-1: Monitoring indicators and monitoring partners for each SEA Objective.

SEA objective	Monitoring indicator	Possible monitoring partner
Landscape and visual amenity	Changes in the condition and extent of existing characteristic elements of the landscape. The condition and quality of new landscape features introduced to the environment (i.e., new flood defences).	Environment Agency Natural England

SEA objective	Monitoring indicator	Possible monitoring partner
Biodiversity, flora and fauna	Recorded numbers of protected habitats and species. Percentage change in area of priority habitats. 'Condition' of designated wildlife, geological sites, and habitats. Deliver measures which also improve the ecological status of WFD waterbodies. Biodiversity net gain and other enhancements achieved in projects delivered through the LFRMS.	Environment Agency Natural England
Water environment	WFD chemical or ecological status of waterbodies within the catchment. WFD ecological status of chalk streams within Buckinghamshire.	Environment Agency Natural England Anglian Water Thames Water
Geology and soils	Number of contamination incidents. Risk levels of contamination. Soil quality. Water quality at known surface run off areas. 'Condition' of geological designated sites.	Environment Agency Natural England Internal Drainage Boards
Historic environment	Number of designated and non-designated heritage sites at risk from flooding. Number of heritage sites adversely impacted upon by flood risk management measures.	Environment Agency Natural England Historic England
Population and human health	Number of open and natural green spaces. Number and value of PRow routes. Number of residential properties at risk from flooding. Number of key services at risk from flooding. Health and wellbeing statistics.	Environment Agency National Health Service
Material assets	Length of road and rail infrastructure at risk from flooding. Number of key infrastructure assets at risk from flooding. Number of Green Infrastructure assets at risk from flooding / created or enhanced through implementation of the LFRMS.	Environment Agency Network Rail National Highways
Climate change	Carbon dioxide equivalent emissions associated with flood management schemes. Use of nature-based solutions which sequester carbon.	Environment Agency Natural England



## References

Office of the Deputy Prime Minister, 2005. A Practical Guide to the Strategic Environmental Assessment Directive. [Online] Available at:

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The Environmental Assessment of Plans and Programmes Regulations 2004. [Online]

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