

# **Carmarthenshire County Council: Local Flood Risk Management Strategy 2024-2030**

SEA Scoping Report

FEBRUARY 2025

# Local Flood Risk Management Strategy 2024-2030

## SEA Scoping Report

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# Abbreviations

Abbreviations	Definition
CaRR	Community at Risk Register
CCC	Carmarthenshire County Council
DrWPA	Drinking Water Protected Area
FCERM	Flood and Coastal Erosion Risk Management
FRMP	Flood Risk Management Plan
LFRMS	Local Flood Risk Management Strategy
LLFA	Lead Local Flood Authority
LSE	Likely Significant Effect
NRW	Natural Resources Wales
RBD	River Basin District
SEA	Strategic Environmental Assessment
WFD	Water Framework Directive

# 1 Introduction

## 1.1 Local Flood Risk Management Strategies: Wales

- 1.1.1 The Flood and Water Management Act 2010<sup>1</sup> (the Act) requires all 22 Lead Local Flood Authorities (LLFAs) in Wales to produce a Local Flood Risk Management Strategy (LFRMS). The Welsh Government's National Strategy for Flood and Coastal Erosion Risk Management (FCERM) in Wales (National Strategy) sets out that approximately 273,000 properties across Wales are at risk of flooding from rivers, the sea and surface water, with almost 400 properties also at risk from coastal erosion<sup>2</sup>. Carmarthenshire County Council (CCC) published its first LFRMS in May 2013, setting out their overarching approach to managing flood risk in Carmarthenshire. A second LFRMS has been drafted, as is the second iteration of a separate Flood Risk Management Plan (FRMP).
- 1.1.2 A LFRMS is a high-level strategy document, providing a framework for the development of specific measures and decision making, associated with managing local flood risk. CCC aims to promote a holistic approach, whilst delivering wider social, economic and environmental benefits.
- 1.1.3 A SEA Scoping Report was prepared for the first LFRMS. Following on from the Scoping Report, CCC commissioned the preparation of an SEA Environmental Report (March 2013). The SEA Environmental Report highlighted the likely significant impact of the strategy on the environment and advised of reasonable alternatives or additional measures that may be necessary to achieve compliance with the relevant legislation. The SEA Environmental Report assessed the potential measures for consideration, but it is noted that these are only to be implemented as part of the detailed Flood Risk Management Plan, and thus, the SEA Environmental Report notes that there was limited information against which to make an assessment. Therefore, determining the significance of effects was not possible.

## 1.2 Background to LFRMS

- 1.2.1 In accordance with the requirements of the Act, the LFRMS only needs to address flood risk arising from local sources. Under the Act, local sources of flooding are defined as follows:
- Surface water runoff;
  - Groundwater; and

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<sup>1</sup> Available at: Flood and Water Management Act 2010 (legislation.gov.uk) [Accessed: 29.11.24]

<sup>2</sup> Gov.wales (2024) Environment and Countryside flooding, properties at risk. Available at: [Properties at Risk of Flooding 2024](#) [Accessed: 15.01.25]

- Ordinary watercourses including any lakes, ponds or other waterbodies that flow into an ordinary watercourse.

1.2.2 The LFRMS focuses on these local sources of flood risk but, as Carmarthenshire has over 90km of coastline, the management of the risk of flooding from the sea and erosion have also been considered.

1.2.3 The LFRMS aims to reduce the risk of flooding where possible, as well as foster greater resilience to flooding when it occurs.

1.2.4 This LFRMS includes the following key components:

- Roles and responsibilities for managing flood risk.
- Carmarthenshire's strategic objectives, which align with National Strategy objectives.
- A strategic assessment of flood risk in Carmarthenshire at a river basin district (RBD) level.
- Overarching measures to manage flood risk across Carmarthenshire.
- Funding and prioritisation.
- Monitoring progress in delivering the LFRMS.

## 1.3 Flood Risk Management Plan (FRMP)

1.3.1 The FRMP has been developed to implement the strategic objectives of the LFRMS which aim to reduce the risk of flooding to people and communities at community level through local actions.

## 1.4 Strategic Environmental Assessment

1.4.1 SEA is a requirement of several pieces of legislation including the European Directive 2001/42/EC 'on the assessment of the effects of certain plans and programmes on the environment' (The SEA Directive)<sup>3</sup> which was transposed directly into Welsh law through the SEA Regulations<sup>4</sup>. SEA is a systemic process for evaluating the environmental consequences of plans and programmes to ensure that environmental issues are integrated and assessed at the earliest opportunity in the decision-making process. Article 1 of the SEA Directive states that the aim is to:

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<sup>3</sup> 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. Available at: <https://www.legislation.gov.uk/eudr/2001/42/adopted> [Accessed: 04.06.25]

<sup>4</sup> Environmental Assessment of Plans and Programmes (Wales) Regulations (SI 2004/1656 (W/170)) and in England, the Environmental Assessment of Plans and Programmes Regulations 2004 (SI 2004/1633). Available at: <https://www.legislation.gov.uk/ksi/2004/1656> [Accessed: 04.06.25]

*“provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development”.*

- 1.4.2 SEA seeks to ensure that environmental considerations are part of the process of preparing certain plans and programmes. The objective of the Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with the Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment.
- 1.4.3 This assessment must also examine the likely significant effects of implementing reasonable alternatives to the plan or programme under consideration.

## **1.5 SEA Screening**

- 1.5.1 An SEA Screening exercise was carried out in April 2024 to establish whether or not the LFRMS will be likely to lead to significant environmental effects. The SEA Screening Report set out the context of the LFRMS and identified potential interactions of the LFRMS with the environment and an explanation of the significance of effects. The SEA Screening Report sought to conclude that the LFRMS would be unlikely to lead to significant environmental effects, and therefore, a full SEA would not be required, due to the nature and scale of development likely to be proposed within the LFRMS.
- 1.5.2 The SEA Screening Report was submitted to Welsh Consultation Authorities, Natural Resources Wales (NRW). The consultation responses received from NRW disagreed with the findings of the Screening exercise and suggested that a full SEA should be undertaken for the LFRMS. Following the advice of the Consultation Authorities, CCC agreed that there was potential for the SEA process to have a significant positive influence on the LFRMS, through the consideration of a high-level assessment and address any potential significant environmental effects. Therefore, a full SEA of the LFRMS is being undertaken, the first stage of which is this SEA Scoping Report.

## **1.6 Purpose of the SEA Scoping Report**

- 1.6.1 SEA is a legally required process for assessing the environmental effects of a plan and aims to ensure that sustainable development is at the heart of the plan-making process. The SEA Regulations require the authority preparing the plan to consult the

Consultation Authorities (NRA and Cadw) on the scope and level of detail of the SEA. The preparation of an SEA Scoping Report provides the most effective means of undertaking this consultation by providing the consultees with a document upon which they can make comments.

1.6.2 This SEA Scoping Report represents the initial stage in the SEA process for the emerging LFRMS and sets the scope for the remainder of the process. Its purpose is to:

- Set the scope and level of detail of the SEA;
- Identify relevant plans, policies, programmes and initiatives that will inform the SEA process and the LFRMS;
- Identify relevant baseline information;
- Identify key sustainability issues and problems of relevance to the LFRMS; and
- Present a SEA Framework, consisting of sustainability objectives and indicators, against which the emerging Strategy can be assessed.

## **1.7 Consultation**

1.7.1 The Consultation Authorities (NRW and Cadw) responded to the consultation on the SEA Scoping Report. The comments received have been taken into account and this SEA Scoping Report updated accordingly. The consultation comments are presented in Appendix C.



## 2 The SEA Process

### 2.1 Stages in the SEA process

2.1.1 The Office of the Deputy Prime Minister's (OPDM) Practical Guide to the SEA Directive<sup>5</sup> subdivides the SEA process into a series of stages. Whilst each stage consists of specific tasks, the intention should be that the process is iterative. Table 2.1 presents the key stages in the SEA process and indicates where specific tasks have been addressed in this Scoping Report. The table also demonstrates how each of the SEA stages is linked to the LFRMS. This Report represents Stage A of the SEA process.

*Table 2.1: Stages in the SEA process*

SEA Stage	Section of the Report (where applicable)	Application to the LFRMS
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope		
A1: Identifying other relevant policies, plans and programmes and sustainability objectives	Section 3 and Appendix A	Stage A corresponds to the scoping stage of the SEA and the findings of this stage are presented in this Scoping Report.  This Scoping Report will be consulted upon for 5 weeks with the statutory consultation authorities.
A2: Collecting baseline information	Section 4 and Appendix B	
A3: Identifying environmental problems	Section 4	
A4: Developing SEA objectives	Section 5	
A5: Consulting on the scope of the SEA	Purpose of this Scoping Report is to seek feedback on the scope of the SEA.	
Stage B: Developing and Refining Options and Assessing Effects		
B1: Testing the plan or programme objectives against the SEA objectives	All of these stages will be documented in the SEA Environmental Report.	Stage B is linked to the overall production of the LFRMS. There should be a considerable degree of interaction between the plan-making and SEA teams during this stage in the process to enable potential adverse effects of the LFRMS to be avoided/ minimised and potential sustainability benefits maximised.
B2: Developing strategies alternatives		
B3: Predicting the effects of the plan or programmes, including alternatives		
B4: Evaluating the effects of the plan or programme, including alternatives		
B5: Mitigating adverse effects		

<sup>5</sup> Available at: [A Practical Guide to the Strategic Environmental Assessment Directive \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/444444/A_Practical_Guide_to_the_Strategic_Environmental_Assessment_Directive.pdf) [Accessed: 28.11.24]

SEA Stage	Section of the Report (where applicable)	Application to the LFRMS
B6: Proposing measures to monitor the environmental effects of the plan or programme implementation		
Stage C: Preparing the SEA Environmental Report		
C1: Preparing the SEA Environmental Report	-	An SEA Environmental Report and Non-Technical Summary documenting the effects of the LFRMS will be prepared and will include an assessment of the options considered during the development of the Strategy.
Stage D: Consulting on the draft plan or programme and the SEA Environmental Report		
D1: Consulting the public and Consultation Authorities on the draft plan or programme and the SEA Environmental Report	-	The SEA Environmental Report will be consulted upon alongside the draft LFRMS.
D2: Assessing significant changes		Following the receipt of consultation feedback, the SEA Environmental Report and the LFRMS may need to be updated to reflect comments received.
D3: Making decisions and providing information		
Stage E: Monitoring the significant effects of implementing the plan or programme on the environment		
E1: Developing aims and methods for monitoring	-	Monitoring will commence once the LFRMS has been adopted.
E2: Responding to adverse effects		

## 3 Review of relevant Plans, Programmes and Strategies

### 3.1 Introduction

- 3.1.1 The LFRMS will be influenced in various ways by other plans or programmes, or by external environmental (or sustainability) protection objectives such as those laid down in policies or legislation. Understanding these relationships can enable the strategy-makers to take advantage of potential synergies, identify opportunities and deal with any inconsistencies and constraints. A large number of other plans and programmes have been reviewed with respect to relevant social, economic, environmental and cultural issues of importance to each of the integrated assessment strands.
- 3.1.2 The SEA Regulations specifically require relevant plans and programmes to be considered as part of the development of the SEA Scope. Box 1 stipulates the SEA Regulations requirements for this stage of the process.

*Box 1: SEA Regulations requirements for the review of Plans Programmes and Environmental Protection Objectives*

*“An outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes” (Schedule 2 (1))*

*“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” (Schedule 2 (5))*

- 3.1.3 A review of plans, programmes and strategies that may affect the preparation of the Strategy was undertaken in order to contribute to the development of both the SEA and the Strategy. This included:
- Identification of any external social, environmental or economic objectives, indicators or targets that should be reflected in the SEA process.
  - Identification of any baseline data relevant to the SEA.
  - Identification of any external factors that might influence the preparation of the document, for example sustainability issues.
  - Identification of any external objectives or aims that would contribute positively to the development of the Strategy.
  - Determining whether there are clear potential conflicts or challenges between other identified plans, programmes or sustainability objectives and the emerging LFRMS.

3.1.4 The review included documents prepared at international, national, regional and local scale. A brief summary of the documents reviewed, and the main findings are summarised below in Table 3.1. Further details presented in Appendix A which identifies key themes from the review.

*Table 3.1: Summary of the PPP review*

Themes relevant to SEA of LFRMS	Summary
International	A review was undertaken of key International Conventions that could potentially influence the development of the LFRMS and the SEA.
UK	A review was also undertaken of relevant publications from organisations including, for example, Department for Transport (DfT), the Department of Business, Energy and Industrial Strategy (DBEIS), and the Department for Environment, Food and Rural Affairs (Defra). These publications outline the action plans and strategies across a breadth of topic areas for example The Air Quality Strategy for England, Scotland, Wales and Northern Ireland and the UK Integrated National Energy and Climate Plan (NECP) as well as the Committee on Climate Change (2021) UK Climate Change Risk Independent Assessment: Technical Report (particularly the 'Summary for Wales'). The objectives of these plans, as well as some of the challenges they raise need to be taken on board, as appropriate. Any previous relevant European Directives are transposed into national regulations.
National	A review was undertaken of plans produced at the Wales national level. Many of these are produced by Welsh Government and specifically address strategic issues such as the economy; transport; health; safety; sustainable communities; housing; employment; and environmental protection.
Regional	In some circumstances, there are region-specific plans and programmes that have been prepared. This includes an Energy Strategy, Regional Economic Framework and Economic Delivery Plan. These documents set out locally specific aims and priorities to promote growth and sustainable measures in South West Wales.
Local	A review was undertaken of local plans produced by Carmarthenshire County Council. These address strategic issues such as a transformation strategy to modernise and drive significant change across the county, equality, social care, poverty, Welsh language promotion, and waste. These programmes aim to develop

Themes relevant to SEA of LFRMS	Summary
	Carmarthenshire into a modern, healthy, and equal county with fewer local disparities.

## 4 Sustainability baseline and key issues and opportunities for the LFRMS

### 4.1 Introduction

4.1.1 Baseline information (social, economic, environmental and cultural) provides the basis for predicting and monitoring environmental effects and helps to identify environmental issues and alternative ways of dealing with them. As the LFRMS is a local-scale document, baseline evidence gathering has been focussed on local-scale data of relevance to the indicators that might be affected by the Strategy, with some national-scale data where there are data gaps.

4.1.2 The box below presents the SEA Regulations requirements for this stage of the process.

*Box 2: SEA Regulations Requirements for baseline and the identification of key sustainability issues*

*“Relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme” (Schedule 2 (2))*

*“The environmental characteristics of the areas likely to be significantly affected” (Schedule 2 (3))*

*“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 Council Directive 79/409/EEC on the conservation of wild birds(a) and the Habitats Directive” (Schedule 2 (4))*

### 4.2 Methodology

4.2.1 Characterising the environmental and sustainability baseline, issues and context is an essential part of developing the SEA Framework. It comprises the following key elements:

- Characterising the current state of the environment of the site and the surrounding areas including social and economic aspects; and
- Using this information to identify existing problems and opportunities that could be considered in the LFRMS.

4.2.2 The environmental, social and economic baseline was characterised through the following methods:

- Review of relevant local, regional and national plans, programmes and strategies; and
- Data research based around a series of baseline indicators developed from the SEA Regulations topics, SEA guidance, previous consultation recommendations from other SEAs and the data available for the region.

4.2.3 The collation of baseline data also enabled the identification of key sustainability issues and opportunities affecting Carmarthenshire.

4.2.4 Appendix B summarises the key baseline trends identified for Carmarthenshire and the surrounding areas. Sustainability issues and opportunities identified in the baseline review are detailed in Table 4.1.

*Table 4.1: Key sustainability issues and opportunities for LFRMS*

SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
<b>Biodiversity, Flora and Fauna</b>	<ul style="list-style-type: none"> <li>• Key pressures to Carmarthenshire's biodiversity include water and air pollution capable of adversely affecting biodiversity; flash flooding with the potential to harm aquatic ecosystems; changes to microclimate which have the potential to alter the performance of some species of plants and animals; exploitation of marine and coastal environments; habitat loss and fragmentation and pressure from development . Resilient Ecological Networks (RENs) offer a key opportunity to respond to these threats. Focusing on nature recovery, which is vital to rebuilding ecological resilience, RENs expand, connect, and manage protected areas, promoting species movement, habitat resilience, and offering a nature based solution to environmental and climate emergencies such as flooding.</li> <li>• Coastal squeeze is a significant challenge for Marine Protected Areas (MPAs) in Carmarthenshire, with projections indicating a loss of 93 hectares of saltmarsh in Carmarthen Bay by 2155 . The Shoreline Management Plan (SMP) is a critical policy framework for addressing risks associated with coastal flooding and erosion, offering large-scale assessments to guide sustainable management of the coastline. By fostering collaboration between the SMP and the LFRMS, there is an opportunity to mitigate the impacts of coastal squeeze, reduce flood risk, and enhance the protection of Carmarthenshire's MPAs.</li> <li>• Non-native, invasive plant species on watercourses present a key risk to biodiversity and flooding in Carmarthenshire. Aquatic</li> </ul>



SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
	<p>species such as Parrot's Feather and New Zealand Pygmy weed have the ability to rapidly dominate a waterbody, contributing to the crowding out of native species and the destabilisation of riverbanks. This potentially increases the risk of flooding and harm to local biodiversity .</p> <ul style="list-style-type: none"> <li>• In order to accommodate urban and industrial developments, some watercourses within Carmarthenshire have been confined or re-routed (most notably the Dafen and Lledi rivers in Llanelli) . Physical modifications are a primary pressure to ecology within watercourses, and it is predicted to continue and even increase into the future . The LFRMS provides an opportunity to address these challenges by integrating ecological considerations into flood risk management. Through measures such as river restoration and the removal or re-design of artificial barriers, the LFRMS can help improve ecological resilience while also managing flood risk. Natural Resources Wales (NRW) is seeking to work in partnership with the environmental sector, land owners, and communities in Wales to deliver an action plan designed to improve current approaches to monitoring the health of protected sites in the future, highlighting a key opportunity to accurately improve Carmarthenshire's nationally protected sites<sup>18</sup>.</li> <li>• There are opportunities for the condition of biodiversity assets to be improved and opportunities should be sought to deliver biodiversity enhancements where possible, for example by targeting the issues that are driving decline and supporting recovery.</li> <li>• There are many high flood risk receptors within Carmarthenshire and its designated sites. With 8942 SSSI, 8114 SAC, and 2009 SPA high risk flood receptors, flooding is a key pressure for Carmarthenshire's biodiversity. There is an opportunity for the LFRMS to mitigate this pressure on biodiversity through the management of these protected sites and their flood risk receptors.</li> <li>• There is a key opportunity to manage flooding in the LFRMS through the utilisation of nature-based solutions and sustainable land management strategies, both of which share principles of ecosystem stewardship, resilience building, and sustainability. Within these strategies, methods including Green and Blue infrastructure, peatland restoration, and soil and land</li> </ul>



SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
	<p>management can contribute to enhanced ecological connectivity and resilience while improving flood management within Carmarthenshire.</p> <ul style="list-style-type: none"> <li>• Under ‘The Carmarthenshire Nature Partnership’, a local organisation with the mission to identify priority areas for action to build ecosystem resilience<sup>4</sup>, a Carmarthenshire Local Nature Recovery Plan (LNRP) (2020-2030) is being developed and undertaken. Not only focusing on designated sites, the LNRP seeks to improve the biodiversity of Carmarthenshire through six key objectives dedicated to restoring degraded habitats, improving the resilience of the wider natural environment, and improving county wide evidence and understanding. This is in efforts to help deliver the commitments of the UN Convention on Biological Diversity and the EU Biodiversity Strategy to halt the decline of the local biodiversity, then reverse that decline.</li> <li>• The Carmarthenshire LNRP emphasises the importance of looking beyond the county's internationally and nationally designated sites to focus on the wider natural environment. This approach presents an opportunity to adopt a holistic strategy for enhancing biodiversity. By embedding biodiversity considerations into the LFRMS, addressing key pressures on species and habitats, and implementing a robust framework of governance and support, the plan provides a clear pathway for delivering meaningful and sustainable action.</li> <li>• A key opportunity for the enhancement of biodiversity in Carmarthenshire can be seen in the ‘Greening Carmarthenshire’ project. With the aim to enhance the green and blue infrastructure (GBI) network found throughout both the urban and rural landscapes of the county, this project seeks to promote the use of Nature based solutions to not only promote the conservation of biodiversity but also make the county a healthier place to live, work, and play.</li> <li>• The ‘Green and Blue Infrastructure Assessment’ within the Revised 2018-2030 Local Development Plan for Carmarthenshire highlights the importance of incorporating multifunctional GBI into development proposals across the county. The assessment calls for public bodies to prioritise planning for GBI that not only supports the creation of RENs but also delivers tangible benefits for people by improving biodiversity and ecosystem services. The LFRMS presents a key opportunity to align with these principles</li> </ul>

SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
	<p>by integrating GBI into flood management strategies. Features such as wetlands, sustainable drainage systems (SuDS), and natural floodplains can reduce flood risk while simultaneously enhancing biodiversity, improving water quality, and building ecological resilience.</p> <ul style="list-style-type: none"> <li>• A Forest Resource Plan (FRP) is a key management document for the Welsh Government's Woodland Estate (WGWE). These plans outline proposals for the future management of woodlands, aligning with current policies and practices. To meet the standards established by the UK Forestry Standard (UKFS) and the UK Woodland Assurance Standard (UKWAS) for water management and flood risk, future iterations of FRPs will be developed. These updated plans present an opportunity to enhance the resilience of ecosystems in Carmarthenshire while designing and managing forests to contribute to flood risk reduction.</li> </ul>
<b>Population</b>	<ul style="list-style-type: none"> <li>• The expected continuation of the aging population in Carmarthenshire could place increased pressure on healthcare, social services, and retirement-related infrastructure, while reducing the workforce population.</li> <li>• The decline of Welsh speakers poses risks for cultural preservation, efforts to revitalise this language presents itself as a key opportunity.</li> <li>• The high reliance on private cars could result in elevated carbon emissions and thus environmental concerns, prompting the opportunity to ensure the maintenance of access to public transport and its infrastructure.</li> <li>• The LFRMS should seek to protect the local economy by maximising the resilience of services, sustainable transport infrastructure and accessibility networks.</li> <li>• Densely populated residential areas and key roads such as Bridge Street and Hillfield Villas are among the areas at most risk of coastal and river flooding. The extensive car parks, paved, and heavily built-up areas across the county also increase the risk of surface water flooding. A key opportunity to reduce this risk is presented in the 'Green and Blue Infrastructure Assessment' within the Revised 2018-2030 Local Development Plan for Carmarthenshire. This emphasises the importance of maximising opportunities to integrate multifunctional GBI within development proposals throughout the county, enhancing flood and water</li> </ul>

SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
	<p>management within residential, built environments. The use of SuDS is also an opportunity to mitigate the risk to key urban flood receptors.</p> <ul style="list-style-type: none"> <li>• Ammanford's flood risk management scheme has reduced flood risk to key transport routes, Ammanford railway station, and 235 properties, highlighting key opportunities for the LFRMS to improve flood management in Carmarthenshire.</li> <li>• With the number of properties at high risk of flooding in Carmarthenshire and coastal erosion projected to increase, addressing climate change is critical to the county's future flood risk management. Combined with population growth and the rising demand for residential infrastructure, there is an opportunity for the LFRMS to integrate flood resilience into new housing developments while adapting existing infrastructure. This could facilitate the enhanced management of increased water levels and flooding events.</li> </ul>
Human Health	<ul style="list-style-type: none"> <li>• The limited access to public transport and rurality of the county may present an issue for access to NHS services, particularly due to the aging population. The LFRMS should ensure that accessibility is maintained or improved through flood risk management measures.</li> <li>• The LFRMS could enhance green open spaces as part of flood risk measures, to promote health and wellbeing.</li> <li>• The variation of deprivation throughout the county could reflect a combination of key issues surrounding historical, economic, geographic, and social factors that have shaped the development and resources of the county over time, highlighting the opportunity to target and develop key factors of concern within each locality. The deprived localities of Carmarthenshire could also be disproportionately affected by flooding and risk of flooding, and the LFRMS should seek to reduce potential geographical inequalities which may contribute to this flood risk.</li> <li>• There may be an opportunity for the combination of flood risk management measures and investment in pedestrian footpaths and cycling infrastructure, which can lower emissions, promote healthier lifestyles, and reduce car dependency.</li> <li>• The ageing population in Carmarthenshire could struggle with some flood risk management measures such as those providing alerts. If systems aren't developed to meet the needs of the older</li> </ul>

SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
	<p>population, instances of isolation and reduced access to essential services may increase.</p> <ul style="list-style-type: none"> <li>• The Carmarthenshire Public Services Board (PSB) have produced a Well-being plan to improve the economic, social, environmental, and cultural wellbeing of the county from 2023-2028. Presenting a key opportunity to improve health and resilience within Carmarthenshire, the plan follows objectives including the reduction of health inequalities and responding to climate and nature emergencies, such as flooding events .</li> <li>• The dedication to implementing new GBI throughout Carmarthenshire demonstrated in the revised 'Local Development Plan 2018 – 2033' creates an opportunity for improved nature contact within urban environments. Through enhancing green and blue spaces and their accessibility, the well-being of communities can benefit whilst the area is adapted to more efficient and sustainable flood management.</li> <li>• The British Red Cross research 'Every time it Rains' explores the experiences of communities impacted most severely by flooding, and highlights the areas in need for improvements in policy and practice that ensures people are prepared for, and can recover more quickly from flooding. This presents a key opportunity to improve the health and wellbeing of Carmarthenshire through improving how the county manages flooding.</li> </ul>
Soil	<ul style="list-style-type: none"> <li>• The predominantly acid loamy, clayey, and sandy soils may limit agricultural productivity and require specific land management practices, this should be considered when developing flood risk management measures in the LFRMS.</li> <li>• Slowly permeable soils around Carmarthen and the east increase the likelihood of surface water runoff and flooding during heavy rainfall. The low-lying areas of land are also susceptible to flooding, posing risks to both agricultural and developed land.</li> <li>• The high frequency of active quarries may contribute to environmental degradation, biodiversity loss, and localised flooding risks within Carmarthenshire.</li> <li>• A key opportunity is presented in the promotion of sustainable agricultural practices, such as contouring, to enhance soil stability and runoff. This will aid in reducing flood risk in the LFRMS.</li> <li>• A key opportunity for the improvement of flood management to mitigate soil erosion and the loss of topsoil is recognised with the</li> </ul>

SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
	<p>use of Sustainable urban drainage systems, such as permeable surfaces.</p> <ul style="list-style-type: none"> <li>• Due to their ties to flood risk, the coal tips in Carmarthenshire present a key issue for flood management in the county. Methods to manage these sites to reduce their impact is a key opportunity for the LFRMS.</li> <li>• Helping to revitalise and maintain peatland areas, the Carmarthenshire Bogs Project offers an opportunity to mitigate climate change, as healthy bogs can store carbon from the atmosphere and are one of the largest known carbon stores. Healthy peatlands can also absorb and hold large quantities of water, reducing surface runoff and offering an opportunity for the LFRMS to mitigate flood risk.</li> <li>• There is a key opportunity to reduce flood risk and soil erosion in the LFRMS seen in nature-based solutions. These sustainable, less invasive strategies can also provide wider benefits such as reducing water pollution and increasing resilience during droughts. Methods such as sustainable and regenerative agricultural land management within catchment areas have a key role in reducing soil surface run-off and erosion associated with degraded soil structure from intensive practices.</li> <li>• A 'Sustainable Farming Scheme' is commencing in Wales in 2026. This scheme is dedicated to making it easier for farmers to continue producing high quality food sustainably and meet commitments to nature, the environment, and climate change, which is a key opportunity to improve flood management, reduce flood risk, and reduce contributions to climate change from agricultural land in Carmarthenshire.</li> <li>•</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• The frequency of flooding presents a key risk in erosion of topsoil, particularly in agricultural areas. This can reduce agricultural productivity in the counties rural landscape, impact aquatic ecosystems and water quality with increased sedimentation in water bodies and increase reliance on artificial soil management.</li> <li>• Flooding can lead to contamination of water sources with pollutants such as sewage, agricultural runoff, and chemicals.</li> <li>• Rising costs of flood management, infrastructure repair, and compensation for affected communities can place strain on public</li> </ul>

SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
	<p>resources and inflict long-term stress on local businesses and residents.</p> <ul style="list-style-type: none"> <li>• The current investment in flood risk infrastructure, SuDS, and nature-based solutions is contributing to resilience to withstand present flood risks. However, with flooding events predicted to become more severe into the future, a further understanding of how the county may be affected and the investment requirements necessary to mitigate this are required to effectively prepare for the future risks of flooding in Carmarthenshire. The Carmarthenshire Interim Action Plan for Nutrient Neutrality presents the opportunity for the design of new developments in catchments of the River Teifi and Cleddau rivers, amongst others, with the integration of SuDS and nature-based solutions. This offers an opportunity to adapt Carmarthenshire to future flooding events, and offers wider benefits to the natural environment, such as pond creation to help reduce the flow of water but also provide an alternative water source for wildlife during drought.</li> <li>• The failure to meet phosphorus and water quality targets in the River Teifi and Cleddau highlights a significant opportunity for the Local Flood Risk Management Strategy (LFRMS) to enhance the management of protected rivers in Carmarthenshire, with the aim of improving ecological conditions across the county. Additionally, the '4 Rivers for LIFE' project presents a valuable opportunity to support the conservation of these protected water bodies by rehabilitating and restoring the natural processes, features, and habitats of the River Teifi and Cleddau. Beyond this, the LFRMS also has the potential to focus on rehabilitating and restoring non-protected rivers in Carmarthenshire, contributing to more sustainable water management practices and reducing flood risks throughout the region.</li> <li>• A key factor contributing to the failure of waterbodies in Wales under the Water Framework Directive (WFD) is the physical modification of watercourses, which has led to their disconnection from floodplains and riparian corridors. Addressing this issue could be achieved by collaborating with ongoing projects and delivery mechanisms, such as Area Statements and Opportunity Catchments, to develop and implement nature-based solutions that tackle the challenges currently affecting Carmarthenshire.</li> </ul>



SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
	<p>The focus of Opportunity Catchments is to maximise the benefits for waterbodies and wellbeing, and this collaboration can offer wide benefits relating to flood risk, climate change, wellbeing, and biodiversity, and offer the opportunity for the LFRMS to mitigate any negative effects of future physical modifications on the natural environment.</p> <ul style="list-style-type: none"> <li>• Flood management and resilience projects can boost the local economy and create employment.</li> <li>• Communities in the County have access to information and resources for flood risk, and to prepare for and respond to flooding, which present a key opportunity for future community resistance to flooding.</li> <li>• Carmarthenshire's bounty of natural water resources provides the opportunity to harness renewable energy from water. A key opportunity could be found in the installation of hydroelectric power projects and the integration of water-based renewable energy into the local energy network.</li> <li>• The abundance of waterbodies presents a key opportunity for tourism and eco-tourism centred around water-related landscapes and activities.</li> </ul>
Air	<ul style="list-style-type: none"> <li>• Air quality in Carmarthenshire is generally very good, reflective of its largely rural nature and high-quality natural environment. However, there are three AQMAs in Carmarthenshire.</li> <li>• Wales has some of the worst air quality in the UK, which is surprising given its low population density and relatively small cities.</li> <li>• The LFRMS should seek to ensure that air quality is not worsened through the creation of flood management measures and should seek to improve air quality through the creation of nature-based solutions and the protection of sustainable transport infrastructure.</li> <li>• A key opportunity for increasing climate resilience in urban areas in Carmarthenshire is seen in the implementation and development of green and blue infrastructure. For example, increasing the surface area of green cover can increase the water retention capacity of the environment and mitigate against both flooding and droughts, as well as wider environmental benefits.</li> <li>• Nature based solutions are a key opportunity for the LFRMS to reduce flood risk, while also contributing to the mitigation of climate</li> </ul>

SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
	<p>change. For example, peatland restoration can enhance carbon capture within Carmarthenshire.</p>
<b>Climatic Factors</b>	<ul style="list-style-type: none"> <li>• The landscape is also suited for solar and hydroelectric power, and investments in this renewable infrastructure can not only help meet local energy demands but also support Wales's transition to net zero emissions. This should be considered when considering flood risk management solutions.</li> <li>• The reduction of industrial, commercial, and domestic energy use since 2005 indicates positive progress towards energy efficiency, which presents an opportunity to further promote energy saving technologies and sustainable practices in these sectors.</li> <li>• The reliance on high-emission industries, particularly iron and steel production and gas powered energy supplies poses a significant risk to achieving net zero targets. Without substantial investment in cleaner technology and renewable energy, Carmarthenshire risks falling behind its climate commitments.</li> <li>• A key opportunity for increasing climate resilience in urban areas in Carmarthenshire is seen in the implementation and development of green and blue infrastructure. For example, increasing the surface area of green cover can increase the water retention capacity of the environment and mitigate against both flooding and droughts, as well as wider environmental benefits.</li> <li>• Nature based solutions are a key opportunity for the LFRMS to reduce flood risk, while also contributing to the mitigation of climate change. For example, peatland restoration can enhance carbon capture within Carmarthenshire.</li> </ul>
<b>Cultural Heritage and Archaeology</b>	<ul style="list-style-type: none"> <li>• Flooding presents a key risk to the integrity and conservation of Carmarthenshire's abundance of listed buildings, Parks &amp; Gardens, Scheduled Monuments, and Conservation Areas, which form an integral part of the historic and cultural fabric of Wales. Increasing investment to and the management of water bodies and flooding throughout Wales presents a key opportunity to conserve the cultural heritage of Carmarthenshire.</li> <li>• The Historic Environment Group (HEG) is a high-level forum designed to include a strategic overview of issues and opportunities in the historic environment in Wales, and to promote common approaches to their protection. This is a key opportunity for the present and future protection of Heritage assets from flooding in</li> </ul>



SEA Baseline Topic	Key Sustainability Issues and Opportunities for the LFRMS
	<p>Carmarthenshire, and the LFRMS could collaborate with the HEG to enhance the understanding of environmental threats to heritage to assets in the county, and mitigate these risks.</p> <ul style="list-style-type: none"> <li>• The Royal Commission on the Ancient and Historical Monuments of Wales has mapped the historical boundaries of Wales to make them freely available. There is an opportunity to commission local refinement of the spatial mapping to the Carmarthenshire scale presented here, which can inform the LFRMS on key areas at risk of flooding, and can be then be addressed within the strategy.</li> </ul>
<b>Landscape</b>	<ul style="list-style-type: none"> <li>• The scenic and high-quality landscape within Carmarthenshire presents opportunities to develop eco-tourism, local identity, and branding surrounding its valuable natural features.</li> <li>• Opportunities to address the landscape challenges of climate change arise in climate resilient flood risk strategies including support for local species, habitat restoration projects, and wildlife corridors, which can all aid in how the landscape of Carmarthenshire adapts to changes in climate.</li> <li>• The loss of tranquil areas within Carmarthenshire and Wales presents a key risk to the county's historical landscape. The protection and maintenance of those that remain can develop the historical natural landscape while offering an opportunity for the LFRMS to implement nature-based flood management techniques within these areas.</li> <li>• The conservation and enhancement of the landscape of the Bannau Brycheiniog National Park can offer a wide range of environmental benefits while also contributing to the reduction of flood risk in Carmarthenshire. Nature based solutions such as reforestation and woodland management can enhance biodiversity and improve air quality, while also offering flood risk reduction through root systems aiding in the stabilisation of soil. This support can also develop resilient ecological networks at a landscape scale, enabling landscape adaptation to climate change.</li> </ul>

## 5 The SEA Approach

### 5.1 The SEA Framework

5.1.1 The SEA Framework underpins the assessment methodology and comprises a series of Environmental Objectives (SEA Objectives) (covering environmental and some social issues) that are used to test the performance of the plan being assessed. Whilst the SEA Directive does not require the use of SEA Objectives, they are a recognised tool for undertaking the assessment and are aspirations/goals that an authority/organisation should work towards achieving. The SEA Objectives provide a means of appraising the performance of the Strategy in a consistent manner enabling its potential effects to be identified and mitigated where possible. The SEA Objectives are separate from the Strategy Objectives, although there may be some overlaps between them. To help measure the performance of the Strategy components against the SEA Objectives, it is beneficial if they are supported by a series of indicators and targets, which will be developed and reviewed as the SEA process progresses. The following section provides further details about the development of the SEA Framework.

#### Development of the SEA Objectives

- 5.1.2 The SEA Objectives have been developed using the review of other relevant plans, programmes and strategies, the baseline data and the key issues and opportunities.
- 5.1.3 Table 5.1 presents the proposed SEA Framework that will be used in the assessment of the LFRMS. Each of the SEA Objectives is supported by a series of guide questions to add further clarity and to assist the assessment process. Following the consultation, all SEA Objectives remained the same, however, additional decision aiding questions were included within each objective to better reflect the key issues and opportunities for the LFRMS.

*Table 5.1: The proposed SEA Framework*

SEA Objective	Decision aiding questions Will the Strategy...?
1. To protect and enhance biodiversity avoiding damage to or loss of designated and undesignated wildlife sites	Protect and enhance designated sites of nature conservation importance? Protect and enhance non-designated sites? Have a likely have a significant effect on protected sites and protected species?

SEA Objective	Decision aiding questions Will the Strategy...?
(SEA Topics: <i>biodiversity, fauna and flora</i> )	<p>Enhance local biodiversity and geodiversity including the enhancement of networks across the region?</p> <p>Provide opportunities for people to access wildlife spaces?</p> <p>Minimise the environmental footprint of flood risk infrastructure?</p> <p>Minimise the effect of modifications to watercourses on biodiversity?</p> <p>Consider the impact of non-native invasive species as a risk to biodiversity and flooding?</p> <p>Deliver nature-based solutions such as Resilient Ecological Networks (RENs) to respond to environmental and climate emergencies and create more natural hydrological flow regimes?</p> <p>Prioritise the use of multifunctional Green and Blue Infrastructure in development proposals?</p> <p>Incorporate Forest Resource Plans (FRPs) to enhance the resilience of ecosystems and contribute to the reduction of flood risk?</p> <p>Minimise the potential effect of coastal squeeze including on the Marine Protected Area Network?</p>
<p>2. To improve physical and mental health and wellbeing for all and reduce health inequalities</p> <p>(SEA Topics: <i>population, human health</i>)</p>	<p>Protect and enhance public accessibility to open space?</p> <p>Reduce geographical inequalities amongst different groups in the community?</p> <p>Create, maintain, and enhance green and blue infrastructure networks?</p> <p>Protect and enhance key urban flood risk receptors and infrastructure?</p> <p>Prioritise the use of nature-based solutions and multifunctional Green and Blue Infrastructure to improve nature contact within urban environments?</p> <p>Maintain the connectivity of communities?</p> <p>Reduce the fear of flood risk and stress caused by flooding events?</p>

SEA Objective	Decision aiding questions Will the Strategy...?
	<p>Protect the local economy by maximising the resilience of services, sustainable transport infrastructure and accessibility networks?</p> <p>Encourage sustainable tourism through the creation of attractive multifunctional spaces for flood storage?</p> <p>Ensure that flood risk management measures reflect local population characteristics including an ageing population?</p> <p>Ensure that any measures of relevance are reflect the need to promote the Welsh Language?</p> <p>Reflect the Carmarthenshire Public Services Board (PSB) Well-being Plan to improve county-wide health, resilience, and ability to respond to climate emergencies?</p> <p>Integrate flood and coastal resilience into new residential infrastructure as flood risk and the demand for housing increases?</p> <p>Facilitate improvements to the policy and practice of flood management to ensure people are prepared for and can recover more quickly from flooding?</p>
<p>3. To protect and enhance water quality (SEA Topic: water)</p>	<p>Affect the quality of waterbodies and groundwater?</p> <p>Limit pollution of water resources?</p> <p>Contribute to the sustainable use of water?</p> <p>Seek to understand and adapt to how flood risk is predicted to increase into the future?</p> <p>Enhance the water quality, management, and protection of SAC rivers?</p> <p>Seek to meet phosphorous targets in waterbodies?</p> <p>Collaborate with ongoing projects to mitigate the negative effects of physical modifications to waterbodies.</p> <p>Utilise nature-based solutions to combat environmental emergencies such as flooding and drought?</p> <p>Seek to integrate nature-based solutions and SuDS into the design of new developments within catchments?</p>

SEA Objective	Decision aiding questions Will the Strategy...?
<p>4. To protect and enhance natural resources, including air and soil</p> <p><i>(SEA Topics: soil, air, material assets)</i></p>	<p>Contribute to the reduction of erosion including through the promotion of sustainable agricultural practices?</p> <p>Limit the pollution of soils?</p> <p>Limit the loss of soils through construction activities?</p> <p>Limit the loss of soils through flood risk?</p> <p>Ensure that air quality is not worsened by the development of flood risk management infrastructure?</p> <p>Improve air and soil quality through the creation of nature-based solutions to flood risk while offering wider benefits such as resilience during droughts?</p> <p>Consider the effect of active quarries on localised flood risk?</p> <p>Enhance the management of coal tips to reduce their impact on flooding?</p> <p>Enhance soil management practices to reduce flood risk?</p> <p>Seek to revitalise and maintain bogs and peatland?</p> <p>Seek to enhance the sustainable management of agricultural land?</p> <p>Utilise SuDS to improve flood management and protect natural resources?</p>
<p>5. To limit and adapt to climate change</p> <p><i>(SEA Topic: climatic factors)</i></p>	<p>Help the water network adapt to the predicted effects of climate change including risk of flooding and more variable weather?</p> <p>Contribute to the creation of renewable energy generation from water?</p> <p>Utilise Green and Blue Infrastructure to enhance climate resilience in urban areas?</p> <p>Incorporate nature-based solutions to contribute to the mitigation of climate change?</p> <p>Seek to develop understanding of how climate change may impact Carmarthenshire into the future?</p>
<p>6. To protect and enhance the historic</p>	<p>Conserve, protect and enhance the historic environment, heritage assets and their settings?</p> <p>Affect protected landscape features?</p>

SEA Objective	Decision aiding questions Will the Strategy...?
environment, landscape and townscape <i>(SEA Topics: cultural heritage, including architectural and archaeological heritage and landscape)</i>	Maintain areas of tranquillity?  Protect and enhance the landscape and townscape character of the area?  Seek to collaborate with the Historic Environment Group (HEG) to enhance the understanding of environmental threats to heritage assets and mitigate these risks?  Seek to locally refine the spatial mapping of Historical monuments in Wales to enhance the identification the key historical sites at risk of flooding in Carmarthenshire?

## 5.2 Geographical and Temporal Scope of the SEA

- 5.2.1 The geographical scope of the SEA will be driven by the geographical scope of the LFRMS i.e. the whole of Carmarthenshire.
- 5.2.2 The LFRMS is intended to apply until 2030. This timescale will be reflected in the SEA of the LFRMS. If there are likely to be any sustainability effects of the Strategy that would last longer than this, these would also be considered.

## 5.3 Aspects of the LFRMS to be assessed and how

- 5.3.1 Individual components of the LFRMS will be assessed to determine their sustainability performance and to provide recommendations for sustainability improvements. The intention will be to ensure that the process is iterative with regular feedback occurring between the strategy-developers and the SEA team as options are developed.
- 5.3.2 The assessment will be presented in an assessment matrix. The matrix is an established method for clearly analysing the performance of a proposal and helps meet the requirements of the SEA Regulations by ensuring that the following elements are considered. This will enable significant effects to be identified:
- Impact – whether the impact will be positive, negative or neutral when assessed against the SEA Objectives.
  - Temporal scale – whether the impact will be short-term (within 5 years), occur in the medium term (5 – 10 years) or occur in the long-term (10 years +).
  - Spatial scale – where the impacts will occur within the area. Any transboundary effects outside of the study area would also be considered.

- Permanency – whether effects will be permanent or temporary.
- Level of certainty – the level of certainty in the prediction will be classified as low, medium or high.
- Cumulative and synergistic effects.

5.3.3 Where negative impacts are identified, measures will be proposed to offset, avoid or otherwise mitigate for the impact. In addition, measures which may further enhance benefits will also be identified as appropriate.

5.3.4 The scoring used for the appraisal of a proposal is defined below:

*Table 5.2: Notations used in the SEA assessment*

Impact	Description	Symbol
<b>Major Positive Impact</b>	The proposal contributes strongly to the achievement of the SEA Objective.	++
<b>Positive Impact</b>	The proposal contributes partially to the achievement of the SEA Objective.	+
<b>No Impact/ Neutral</b>	There is no clear relationship between the proposal and/or the achievement of the SEA Objective or the relationship is negligible.	0
<b>Negative Impact</b>	The proposal partially detracts from the achievement of some elements of the SEA Objective.	-
<b>Major Negative Impact</b>	The proposal strongly detracts from the achievement of all elements of the SEA Objective.	--
<b>Uncertain impact – more information required</b>	It is not possible to determine the nature of the impact as there may be too many external factors that would influence the appraisal, or the impact may depend heavily upon implementation at the local level.	?
<b>Positive and Negative Impacts</b>	The proposal has a combination of both positive and negative contributions to the achievement of the SEA Objective.	+/-

5.3.5 It will be important to consider the immediate local impacts of the proposals as well as wider Carmarthenshire and regional implications. Where appropriate, the assessment will consider existing evidence and research when making linkages between new development and the types of impact this could have on different strands of the community, for example, community cohesion, equality, health etc.

5.3.6 In all cases, the assessment of proposals will make good use of the baseline data collated which will be supplemented with further detail as appropriate at the assessment stage. When assessing each element, the questions will be asked:

- To what extent does the proposal meet the SEA Objectives?
- To what extent will the proposal seek to address key issues?
- To what extent will the proposal affect the current baseline conditions?

5.3.7 It should also be remembered that this is a strategic assessment, and it is not the intention to enter into the level of detail reserved for project-level Environmental Impact Assessment. All assessment will be desk-based.

## **5.4 Assessment of Alternatives**

5.4.1 It is a requirement of the SEA Regulations that alternatives are assessed and, therefore, alternative options will be assessed using the SEA Framework. The purpose of the assessment will be to determine the sustainability strengths and weaknesses of each option such that this information can be used by the plan-makers to inform their decision to select the preferred options.

5.4.2 Each alternative option will be appraised using the same assessment matrix identified above. The table will also identify whether the site is being taken forward as a preferred option and why, or whether it is a rejected alternative and why.



## 6 Next Steps

- 6.1.1 This SEA Scoping Report has been consulted upon in accordance with the requirements of Regulation 12 of the SEA Regulations. This SEA Scoping Report was subject to a 5-week consultation with NRW and Cadw.
- 6.1.2 Following the receipt of the consultation responses, comments has been reviewed, and modifications have been made to the SEA Scoping Report as necessary. This is documented in Appendix C.

## Appendix A

### Review of Relevant Plans, Policies and Environmental Protection Objectives

## Appendix B

### The Sustainability Baseline and Key Issues and Opportunities

## Appendix C

### Consultation Responses

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