



# National Flood and Coastal Erosion Risk Management Strategy for England:

A statement on the environmental content

(Statement of Environmental Particulars)

25 September 2020

We are the Environment Agency. We protect and improve the environment.

We help people and wildlife adapt to climate change and reduce its impacts, including flooding, drought, sea level rise and coastal erosion.

We improve the quality of our water, land and air by tackling pollution. We work with businesses to help them comply with environmental regulations. A healthy and diverse environment enhances people's lives and contributes to economic growth.

We can't do this alone. We work as part of the Defra group (Department for Environment, Food & Rural Affairs), with the rest of government, local councils, businesses, civil society groups and local communities to create a better place for people and wildlife.

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# This document

This is a statement on the environmental content of the National Flood and Coastal Erosion Risk Management Strategy for England. It is also known as a statement of environmental particulars.

The Environment Agency must publish this document to meet legal requirements under the Environmental Assessment of Plans and Programmes Regulations 2004.

The document is of interest for people and organisations who:

- have a statutory role in environmental assessment
- responded to the consultation on the strategy and its environmental assessment

This is a technical document which contains technical language. There is a non-technical summary which you may find easier to read and understand.

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# 1. Introduction

## 1.1. Purpose of the statement of environmental particulars

This statement of environmental particulars (SOEP) is a statutory requirement under the Environmental Assessment of Plans and Programmes Regulations 2004. The SOEP sets out how we have:

- integrated environmental considerations into the National Flood and Coastal Erosion Risk Management (FCERM) Strategy for England (the Strategy)
- taken into account the strategic environmental assessment (SEA) environmental report
- taken into account opinions expressed in response to the consultation on the environmental report

The SOEP also summarises:

- the reasons for adopting the Strategy in its final form
- how we will monitor the likely significant environmental effects of implementing the Strategy

## 1.2. The National Flood and Coastal Erosion Risk Management Strategy for England

The Flood and Water Management Act 2010 requires the Environment Agency to develop, maintain, apply and monitor a strategy for FCERM in England. The Strategy applies to coastal erosion and flooding, such as from rivers, the sea and surface water. The Strategy provides a general framework for action by the organisations with specific functions in managing the risk of flooding and coastal change. These are known as risk management authorities (RMAs). In England they are:

- the Environment Agency
- unitary authorities, county councils and district councils
- highway authorities
- internal drainage boards
- water and sewerage companies

The Strategy replaces the first national strategy for England published in 2011. It fulfils the government's commitment in the 25 year environment plan to update the original strategy.

The Strategy sets out a new philosophy for managing flooding and coastal change. This is in the context of the challenge of climate change and a significant increased risk of flooding and coastal change.

The vision of the Strategy is for England to be a nation ready for, and resilient to, flooding and coastal change - today, tomorrow and to the year 2100. The strategy has 3 high level ambitions:

- climate resilient places
- today's growth and infrastructure - resilient in tomorrow's climate
- a nation ready to respond and adapt to flooding and coastal change

To support these longer term ambitions the Strategy sets out a series of strategic objectives spanning the next 10 to 30 years. Over 50 measures with shorter timescales

support these objectives. They cover a wide range of activities needed to manage the increased risk of flooding and coastal change due to climate change. They can be grouped under the following broad themes:

- planning for resilient places, this includes information and approaches for updating plans and strategies for managing flooding and coastal change in different places
- delivering flood and coastal change protection and resilience, including different ways for managing the risk of flooding and coastal change and how projects are undertaken
- preparing for and recovering from flooding and coastal change, for people at continued risk or who have been affected by a flood event
- raising awareness of flooding and coastal change, engaging people in decision-making and improving collaborative working across everyone involved in risk management

For further information please see the [National Flood and Coastal Erosion Risk Management Strategy for England](#).

### 1.3. Strategic environmental assessment

SEA is a process that ensures consideration is given to the environment during the development of certain "plans and programmes". In doing so, it contributes to the promotion of sustainable development and environmental protection.

Detailed requirements for SEA are set out in the Environmental Assessment of Plans and Programmes Regulations 2004 (the regulations). In accordance with the regulations the Environment Agency determined the update to the Strategy required an SEA. The SEA process requires the Environment Agency to:

- identify, describe and evaluate the likely significant environmental effects of implementing the Strategy and any reasonable alternatives
- identify measures to prevent, reduce or as fully as possible offset any significant adverse effects
- provide an early and effective opportunity to engage in the preparation of the Strategy through consultation
- monitor the implementation of the Strategy to identify any unforeseen environmental effects and take remedial action where necessary
- report all the above in an environmental report, drawn up during the preparation of the Strategy and before its adoption

We published the SEA environmental report together with the draft Strategy as part of the public consultation. This was held between May and July 2019.

For further information on how the SEA was undertaken and its findings please see the [SEA environmental report](#).



## 2. How environmental considerations were integrated into the Strategy

### 2.1. Introduction

This section explains how we integrated environmental considerations when developing the Strategy. A number of interrelated activities supported this. These are outlined and relate to the:

- context for preparing the Strategy
- approach to engaging and consulting with stakeholders
- SEA process
- habitat regulations assessment (HRA)

### 2.2. Preparing the Strategy

The environment and sustainability were considered throughout the preparation of the Strategy. In particular, the urgency and challenge of dealing with climate change underpins the development of the Strategy. This is reflected in the Strategy's vision for a nation ready for, and resilient to, flooding and coastal change - today, tomorrow and to the year 2100. Climate change also frames each of the Strategy's ambitions and their supporting objectives and measures.

The 25 year environment plan was another important influence throughout the preparation of the Strategy. In particular, this included its ambitions to:

- leave the environment in a better state than we found it by, for example, by protecting and enhancing the natural environment and cultural heritage
- improve the long term resilience of our homes, businesses and infrastructure at risk of flooding and coastal change
- use more natural flood management solutions where appropriate
- increase the uptake of sustainable drainage systems (SuDs), especially in new developments
- use and manage land sustainably
- reconnect people with the natural environment and its benefits for health and wellbeing

Taking this context into account the Strategy includes strategic objectives that specifically deal with environmental aspects. These include:

- strategic objective 1.4: Between now and 2030 risk management authorities will use nature based solutions and improve the environment through their investments in flood and coastal resilience
- strategic objective 2.2: Between now and 2030 risk management authorities will encourage environmental net gain in all new development to support resilience to flooding and coastal change

The Strategy also contains measures to help achieve these strategic objectives and other related aspects. The measures, for example, cover the following themes:

- achieving biodiversity gain in flood and coastal projects and programmes



- contributing to improving the natural, built and historic environment through investments in flood and coastal projects
- helping to achieve objectives for the water environment as set out in River Basin Management Plans (RBMPs)
- encouraging environmental net gain in development proposals
- expanding the use of nature based solutions, including those that work with natural processes, natural flood management approaches and SuDs
- working with others on developing plans and initiatives to create and restore habitats
- working with Natural England to develop new approaches for conserving protected sites, species and natural landscapes
- coordinating the strategic planning of water resources and flood and coastal risk management
- working with farmers, landowners and others on managing and improving resilience to flooding and coastal change

We incorporated more general environmental considerations when we developed other elements of the Strategy. For example, the Strategy recognises that every place is different and the actions taken to improve resilience to flooding and coastal change need to put people and places put at the heart of decision-making. Suggested tools for achieving place-based resilience specifically include natural flood management, good land management, green infrastructure and SuDs. It is essential decision-making recognises that environmental needs and opportunities can be different in different places. As such the combination of tools to improve resilience can be tailored to a particular place, including its environment.

The Strategy encourages the use of adaptive approaches to help places plan and adapt to flooding and coastal change. Other recognised benefits of these approaches are the ability to respond to climate change and to reflect changing social, economic and environmental needs. The Strategy also encourages the development of future skills and talent across the risk management sector. This includes environmental specialists.

### **2.3. Stakeholder engagement and consultation**

A collaborative and multi-stakeholder approach has informed the development of the Strategy. We undertook an extensive engagement process which commenced at an early stage. This helped to shape the overall direction of the Strategy. We also set up 5 working groups of stakeholders. The working groups included representatives from environmental organisations. An independently chaired advisory group helped steer the overall process and ensured an inclusive input from all stakeholders.

We held a public consultation on the draft Strategy between May and July 2019. During this time we promoted the consultation with stakeholders and held meetings with a range of stakeholder groups and partners.

There were over 400 responses to the public consultation on the draft Strategy. This included responses from the public, private and voluntary sector. A wide range of environmental organisations responded to the public consultation, including Natural England and Historic England.

Overall, the public consultation showed high levels of support for the approach and ambitions of the draft Strategy. Technical experts reviewed the responses to the consultation. This helped to further inform and refine the Strategy. We also shared the

main findings of the consultation with working groups of external stakeholders. This helped to inform our approach to particular matters raised in the consultation.

A [consultation response summary document](#) provides a full outline of the responses received on the draft Strategy. It also outlines how we have taken them into account in finalising the Strategy.

## 2.4. Strategic environmental assessment

We carried out the SEA to ensure we considered environmental effects during the development of the Strategy alongside technical, economic and other factors. The assessment process fed into the preparation of the Strategy at a number of stages. Through this it has helped to influence the environmental content of the Strategy. The iterative nature of the SEA process and the plan-making process included:

- holding a SEA workshop at an early stage with the technical leads responsible for developing the Strategy
- undertaking reviews of early iterations of the Strategy and its potential significant environmental effects

The SEA environmental report sets out the findings of the assessment carried out as part of the preparation of the draft Strategy. It outlines the potential significant environmental effects of implementing the draft Strategy and of reasonable alternatives. It also proposes mitigation and enhancement measures to reduce potential negative effects and or improve positive effects. Section 3 explains how we have taken these into account in finalising the Strategy. Section 4 outlines how we have taken into account views expressed in response to the consultation on the environmental report.

The Strategy sets out a national framework for lead local flood authorities to update their local FCERM strategies. It also provides a national framework for RMAs to undertake individual FCERM projects. Many of these local level strategies and projects will also undergo separate environmental assessments. These environmental assessments are at a more relevant scale to consider the potential effects of managing flooding and coastal change in different places. The Strategy outlines the role all RMAs have in creating better places for people and wildlife and supporting sustainable development. This includes meeting legal requirements on undertaking local level assessments of plans and projects.

## 2.5. Habitats regulations assessment

We carried out a HRA in conjunction with the development of the Strategy. This meets requirements under the Conservation of Habitats and Species Regulations 2017. The HRA considers the potential implications of the Strategy on European sites. These include Special Areas of Conservation, Special Protection Areas and Ramsar sites. The findings of the HRA also fed into the SEA process.

A draft HRA was published alongside the draft Strategy for consultation. Natural England commented on the draft HRA. We have continued to work with Natural England in preparing the final HRA. The HRA identifies measures to mitigate the potential adverse effects for European sites of implementing the Strategy. We have taken these measures into account in finalising the Strategy.

The HRA recognises that many strategies, plans and projects developed within the framework set by the Strategy will be subject to their own requirements for HRA. This provides a local level framework to appropriately assess the effects of specific risk management policies and actions on European sites.

For further information on how the HRA was undertaken and its findings please see the [final habitats regulations assessment](#).



## 3. How the environmental report was taken into account

### 3.1. Introduction

The SEA environmental report sets out the findings of the assessment carried out as part of the preparation of the draft Strategy. Overall, the assessment identified predominantly positive or neutral effects. In particular, the assessment identified significant positive effects in relation to:

- population and human health
- climatic factors
- material assets

Where the results of the assessment identified a neutral effect this often reflected a mix of potential negative and positive effects. This was particularly the case for topics relating to:

- water, including water resources and water quality
- resource management
- cultural heritage
- landscape

In such cases the identified effects were not considered significant at a national scale.

The assessment found that the draft Strategy could have both positive and negative effects on biodiversity. We adopted a precautionary approach to this. This resulted in the assessment identifying a potentially significant negative effect on biodiversity. This precautionary approach was mainly associated with the broad groupings of measures linked to the planning and delivery of flood and coastal risk management. A precautionary approach to potential impacts on European sites is also reflected in the final HRA.

The sections below summarise how in finalising the Strategy we have addressed proposals in the environmental report, to reduce potential negative effects and or improve positive effects. Section 2.4 outlines how the SEA process in general has informed the preparation of the Strategy from an early stage. This was alongside the collaborative approach to stakeholder engagement, the influence of the 25 year environment plan and the recognition of a changing climate. As a result of this environmental and sustainability considerations have been central to the development of the Strategy. In most cases, therefore, the proposals in the environmental report seek to build on or further strengthen the environmental and sustainability content of the Strategy.

The following sections provide a short summary of the potential effects identified for each topic covered by the environmental report. Also summarised are the proposed mitigation measures and or opportunities for enhancement. Full details of these are set out in the environmental report. A number of mitigation and enhancement proposals were common across most of the SEA topics. We have summarised these more general proposals, and how the Strategy has taken them into account, at the end of the section.

### 3.2. Biodiversity

#### 3.2.1. Summary of effects

The environmental report outlines the potential for both positive and negative effects on biodiversity (including flora and fauna). Positive effects are particularly associated with risk

management solutions that seek to work with natural processes and use natural flood management approaches. These can be collectively described as nature based solutions. Other potential benefits are also linked to the land management practices and the expansion of SuDs and green infrastructure. The encouragement given to risk management authorities to achieve biodiversity gain is also considered beneficial especially in the medium to longer term.

The environmental report recognises that some tools for managing the risk of flooding and coastal change can have negative effects on habitats and species. This includes the construction of new flood and coastal defences which can result in the loss, damage or fragmentation of habitats. We also took account of the findings of the draft HRA, which adopted a precautionary approach. This is because it could not rule out the possibility that implementing the Strategy would have negative consequences for some European sites.

The environmental report recognises that potential effects on biodiversity will depend on a number of factors at the local level. Taking account of uncertainties at the national level and previous experience of risk management, we adopted a precautionary approach in the assessment. This is in line with the HRA process. Overall, the environmental report identifies a potential negative effect on biodiversity, which could be significant at a national scale.

### **3.2.2. Proposed mitigation and enhancement**

Mitigation and enhancement proposals outlined in the environmental report include:

- continuing to work with Natural England and other stakeholders on initiatives for protected sites
- working collaboratively with stakeholders so that the development of a national set of resilience tools includes tools that have the potential to benefit biodiversity
- giving more prominence to the role of the natural environment in urban areas, including the expansion of green infrastructure networks and SuDs
- recognising the role of environmental stakeholders in incident response and recovery

### **3.2.3. How proposals have been taken into account in finalising the Strategy**

We have included new measures which encourage collaborative working with Natural England on flood and coastal risk management. One measure focuses on Natural England working with RMAs to develop new approaches for conserving protected sites, species and natural landscapes. Another encourages RMAs to work with Natural England and other partners to develop Local Nature Recovery Strategies. These build on other measures that encourage RMAs to:

- work with catchment partnerships and others in using nature based solutions
- improve the natural environment through their investments

We have also reinforced the importance of working with other organisations and stakeholders in managing flooding and coastal change. This includes engaging with other government departments and agencies, community groups, and catchment partnerships. The action plan which will support the Strategy will outline where we will continue to engage with partners during the Strategy's implementation.

The Strategy provides more information on the range of tools that can be used to improve resilience to flooding and coastal change. These include SuDs, land management and approaches that work with natural processes, such as natural flood management. We have also indicated the role of SuDs and green infrastructure in helping to reduce surface water flooding in towns and cities.



We have developed further the support the Strategy gives to nature based solutions. This encompasses solutions that work with natural processes and natural flood management approaches. The Strategy includes a more detailed explanation of the benefits nature based solutions can provide for biodiversity and people in urban and rural areas.

The Strategy retains a clear commitment for RMAs to encourage environmental net gain in new development. We have included examples of how this could be achieved. These include the use of SuDs and natural flood management. More generally, we have incorporated additional references in the Strategy on the use of SuDs and green infrastructure.

As outlined above, we have reinforced the need to work with other organisations and stakeholders in managing flooding and coastal change. This encompasses responding to and recovering from incidents.

### **3.3. Population and human health**

#### **3.3.1. Summary of effects**

The environmental report identifies mainly positive effects on population and human health. Many of these benefits are likely to be significant at a national scale. This is particularly with regard to the health and wellbeing of communities at risk of flooding or coastal change. This is associated with reducing the potential hazards of flooding. There is also the benefit of helping to alleviate the stress and anxiety of experiencing and or being at risk of flooding.

Other potential benefits include the potential for resilience actions to improve access to and the enjoyment of the natural environment. There are also potential positive effects on social deprivation and equality. This could be achieved through risk management authorities supporting economic growth and regeneration.

At the local level, several risks are highlighted in the environmental report. This is mainly in relation to the implementation of resilience standards and new ways of funding. The assessment identified that these could have possible implications for certain communities or places.

#### **3.3.2. Proposed mitigation and enhancement**

Mitigation and enhancement proposals outlined in the environmental report include:

- supporting the inclusive engagement of communities in all places
- giving more prominence to the role of the natural environment in urban areas, including the expansion of green infrastructure networks and SuDs
- recognising that achieving environmental net gain can include recreation and amenity provision as well green space
- using national and local data sets on population and indices of deprivation to inform risk management plans and strategies
- retaining of a level of prioritisation for deprived areas at significant risk of flooding in relation to new funding and financing for risk management

#### **3.3.3. How proposals have been taken into account in finalising the Strategy**

The Strategy continues to put people and places at the heart of decision-making for planning and adapting to future flooding and coastal change. To support this we have expanded on our ambition for a nation ready to respond and adapt to flooding and coastal change. As part of this we have included an outline of recent research on how communities and RMAs can best work together. We have also added more measures to



achieve this. An example is the Strategy's commitment to share learning and best practice on working with communities. Another example is the encouragement it gives for investing in engagement skills and capabilities to support communities.

In section 3.2.3 we outline the changes made to the Strategy with regard to the use of SuDs and green infrastructure. The Strategy refers to the use of SuDs and natural flood management as examples of contributing to net environmental gain. These approaches for improving resilience can also provide other environmental benefits, such as recreational and amenity benefits. This is recognised by the Strategy in support of creating better places for people and wildlife.

The Strategy encourages RMAs to work together and with others to help places plan and adapt to flooding and coastal change. It also encourages RMAs to:

- work with planning authorities on spatial plans and other strategies
- advise on new development
- identify ways in which their investments in local places can enable growth that is sustainable and resilient to climate change

By working with partners, we expect these activities will be informed by relevant data sets on population and deprivation.

The Strategy includes further information on partnership funding. This includes an outline of the approach to funding and recent changes. We envisage the availability of grant in aid funding for risk management will continue to increase with greater socio-economic deprivation. Any future changes would be a matter of government policy and outside the remit of the Strategy.

## **3.4. Resource management**

### **3.4.1. Summary of effects**

The environmental report defines resource management to include soils and the use of resources. The environmental report identifies potential benefits for protecting and conserving soils. These are typically associated with natural flood management approaches and land management practices. At the local level potential positive and negative effects on resource use and waste are also identified. These effects are dependent on the combination of resilience tools and their implementation at the local level. Overall, the environmental report identifies a neutral effect on resource management with no significant effects at the national level.

### **3.4.2. Proposed mitigation and enhancement**

Mitigation and enhancement proposals outlined in the environmental report include:

- working collaboratively with stakeholders so that the development of a national set of resilience tools takes account of opportunities for protecting and conserving soils
- increasing collaborative working at a catchment scale and engaging with the agricultural sector and other land managers

### **3.4.3. How proposals have been taken into account in finalising the Strategy**

We have provided more information on the interactions between soils and managing the risk of flooding and coastal change. This is addressed in several ways.

We have developed further the support the Strategy gives to nature based solutions. This includes a more detailed explanation of the benefits of these types of solutions, such as the use of natural flood management approaches.

We have also added a strategic objective and measures that deal specifically with agriculture and land management. These encourage RMAs to work with farmers and land managers to help manage and adapt to flooding and coastal change. The Strategy also recognises the importance of working with other organisations and stakeholders, including catchment partnerships.

## **3.5. Water**

### **3.5.1. Summary of effects**

The environmental report identifies the potential for both positive and negative effects on the water environment. Resilience tools that work with natural processes and use natural flood management approaches can contribute to improving the condition of water bodies. Together with land management practices they can also benefit water quality and the sustainable management of water. New flood and coastal defences can, however, negatively affect the natural functioning of water courses and their ecology. The environmental report takes account of this variation. Overall, it identifies a neutral effect on the water environment at the national level.

### **3.5.2. Proposed mitigation and enhancement**

Mitigation and enhancement proposals outlined in the environmental report include:

- giving more prominence to the role of the natural environment in urban areas, including the expansion of green infrastructure networks and SuDs
- sharing across the risk management sector good practice on assessments that are required to demonstrate legal compliance
- improving the sharing of data on the water environment

### **3.5.3. How proposals have been taken into account in finalising the Strategy**

The Strategy retains a commitment for RMAs to help achieve objectives for the water environment as set out in river basin management plans (RBMPs). It also encourages RMAs to contribute to the government's ambitions for improving the water environment as described in the 25 year environment plan.

In section 3.2.3 we outline how we have updated the Strategy to strengthen references to the use of SuDs and green infrastructure. The Strategy, for example, recognises the contribution they can make to environmental net gain in new development.

The Strategy includes further information on the roles and responsibilities of RMAs. This explains that all RMAs have a duty to cooperate with each other and to share information. We have also outlined in more detail our strategic overview role. An important part of our role is sharing data, information and tools. We also give advice to RMAs on how investments in flooding and coastal change can provide integrated solutions that protect and enhance the environment.

## **3.6. Climatic factors**

### **3.6.1. Summary of effects**

The assessment took into account carbon emissions under climatic factors. We scoped out of the assessment any likely significant effects of the strategy on air quality at a national level.

The environmental report identifies a significant positive contribution to adapting to climate change. This is mainly due to measures associated with planning and delivering risk management and preparing and recovering from flooding and coastal change.



The environmental report outlines the potential for both positive and negative effects at the local level on climate change mitigation. Overall, it identifies a neutral effect on climate change mitigation at the national level. This is because any increases or decreases in carbon emissions through risk management activities are unlikely to be significant in a national context.

### **3.6.2. Proposed mitigation and enhancement**

Mitigation and enhancement proposals outlined in the environmental report include:

- introducing an extra measure on encouraging flood and coastal change plans, strategies and projects to achieve low or zero carbon approaches
- using consistent information on climate change adaptation to inform new funding and financing for managing flooding and coastal change

### **3.6.3. How proposals have been taken into account in finalising the Strategy**

We have updated the Strategy to reflect the government's commitment to reach net zero carbon emissions by 2050. This is outlined in a new section on the changing climate. This section outlines the findings of recent research on climate change. It also sets the context for why the Strategy is seeking to mitigate and be more resilient and adaptable to a changing climate.

The Strategy confirms our commitment to become a net zero carbon organisation by 2030. We will also work with our supply chain on developing new ways to reduce carbon from the construction and operation of flood and coastal defences. The Strategy also recognises the role of RMAs in contributing to local initiatives for reducing carbon emissions.

We have revised the Strategy to include a section on future risk and investment needs. This section describes the evidence and data we will produce to inform the management of flooding and coastal change. We also plan to update guidance on flood risk assessments to account for the latest evidence on climate change.

## **3.7. Material assets**

### **3.7.1. Summary of effects**

The environmental report defines material assets to include homes, businesses, infrastructure, agricultural land and existing flood and coastal risk management assets. It identifies mainly positive effects on material assets, with many of these significant at a national scale. In particular, this includes the significant contribution of the Strategy to improving the resilience of communities, the economy and infrastructure. At the local level, the environmental report highlights potential risks in relation to the implementation of resilience standards. This relates to possible implications for certain communities or places.

### **3.7.2. Proposed mitigation and enhancement**

Mitigation and enhancement proposals outlined in the environmental report include:

- engaging with farmers and the agricultural sector
- working collaboratively with stakeholders so that the development of a national set of resilience tools takes account of agriculture and its contribution to risk management
- retaining of a level of prioritisation for deprived areas at significant risk in relation to new funding and financing for risk management

### **3.7.3. How proposals have been taken into account in finalising the Strategy**

We have added a strategic objective and measures that deal specifically with agriculture and land management. They encourage RMAs to work with farmers and land managers to help manage and adapt to the risks of flooding and coastal change. They also support the development of initiatives, such as the new Environmental Land Management scheme, to help farmers and landowners become more resilient to a changing climate.

The Strategy includes further information on partnership funding. This includes an outline of the approach to funding and recent changes. We envisage the availability of grant in aid funding for risk management will continue to increase with greater socio-economic deprivation. Any future changes would be a matter of government policy and outside the remit of the Strategy.

## **3.8. Cultural heritage**

### **3.8.1. Summary of effects**

The environmental report outlines the potential for both positive and negative effects on cultural heritage. We have defined cultural heritage to include architectural and archaeological heritage.

Many historic places are at risk of flooding and coastal change. As a result resilience actions that reduce the risk and consequences of flooding can be beneficial. The implementation of some resilience actions, for example new flood and coastal defences, can have negative effects on the character and setting of historic places. Habitat creation can also affect historic places and the character of rural landscapes. Other tools focused on adapting to residual risk, such as property flood resilience, can have positive and negative effects on historic places. This will depend on their implementation at the local level and the sensitivity of different places.

Overall, the environmental report identifies a neutral effect on cultural heritage, with no significant effects anticipated at the national level. This takes into account the potential for positive and negative effects and the influence of varying factors at the local level.

### **3.8.2. Proposed mitigation and enhancement**

Mitigation and enhancement proposals outlined in the environmental report include:

- working collaboratively with stakeholders so that the development of a national set of resilience actions takes account of the historic environment
- working with Historic England to continue to investigate the effects of flooding and coastal change on historic places
- engaging at the local level with historic environment stakeholders and utilising data on heritage assets and historic landscape character to inform decision-making
- taking account of the sensitivities of historic buildings as part of the introduction of flood resilience measures
- recognising that achieving environmental net gain can include the historic environment
- recognising the role of environmental stakeholders in incident response and recovery

### **3.8.3. How proposals have been taken into account in finalising the Strategy**

We have reinforced the importance of working with other organisations and stakeholders in managing flooding and coastal change. This includes engaging with other government departments and agencies, community groups, and catchment partnerships. The action plan which will support the Strategy will outline where we will continue to engage with partners during the strategy's implementation.



In relation to property flood resilience measures, we have updated the Strategy so that it recognises these will depend on the type and age of a building. We will also continue to work with partners, such as Historic England, in implementing the Strategy.

Engagement with stakeholders at the national and local level provides the opportunity to share relevant data and information. The Strategy also recognises that many local level strategies and projects will undergo separate environmental assessments. These local level assessments are typically informed by data sets on the environment, including the historic environment.

Creating better places for people and wildlife continues to underpin the Strategy. The Strategy recognises that RMAs are required to comply with environmental legislation, including that concerned with the conservation and enhancement of the historic environment. The Strategy also encourages RMAs to contribute to improving the natural, built and historic environment through their investments in flood and coastal projects. We have also clarified that contributing to environmental net gain can include other environmental benefits.

As outlined above, we have reinforced the need to work with other organisations and stakeholders in managing flooding and coastal change. This encompasses responding to and recovering from incidents.

## **3.9. Landscape**

### **3.9.1. Summary of effects**

The environmental report outlines the potential for positive and negative effects on the character of urban and rural landscapes. Risk management plans and projects can help improve the resilience of existing landscapes to flooding and coastal change. Flood and coastal defences, however, can also result in the loss of features that contribute to the character of rural and urban landscapes and their use by people. Risk management interventions may also provide the opportunity to enhance the public realm and green space provision.

The environmental report also highlights the potential for larger scale landscape change. This is mainly in places where it might not be possible to provide resilience to future climate change. This could have negative and positive effects on people and nature depending on the local area.

Overall, the environmental report identifies a neutral effect on landscape character, with no significant effects anticipated at the national level. This takes into account the potential for positive and negative effects. It also considers the likelihood that larger scale landscape change will be localised to particular places at highest risk.

### **3.9.2. Proposed mitigation and enhancement**

Mitigation and enhancement proposals outlined in the environmental report include:

- working collaboratively with stakeholders so that the development of a national set of resilience actions takes account of potential implications for landscapes
- engaging at the local level with stakeholders and utilising data on landscape characterisation and other evidence on nature based solutions
- giving more prominence to the role of the natural environment in urban areas, including the expansion of green infrastructure networks and SuDs
- recognising that achieving environmental net gain can include benefits for urban and rural areas

### 3.9.3. How proposals have been taken into account in finalising the Strategy

In section 3.2.3 we outline the changes made to the Strategy that encourage collaborative working with Natural England on flood and coastal risk management. This includes a measure on Natural England working with RMAs to develop new approaches for conserving protected sites, species and natural landscapes.

We have also reinforced the importance of working with other organisations and stakeholders in managing flooding and coastal change. This includes engaging with other government departments and agencies, community groups, and catchment partnerships. In section 3.3.3 we explain how we have strengthened the Strategy's ambition to involve local people in decision-making on flooding and coastal change.

Engagement with stakeholders at the national and local level provides the opportunity to share relevant data and information. The Strategy, for example, highlights our natural flood management evidence base. The Strategy also recognises that many local level strategies and projects will undergo separate environmental assessments. These local level assessments are typically informed by data sets on the environment, including landscape.

In section 3.2.3 we outline how we have updated the Strategy to strengthen references to the use of SuDs and green infrastructure. The Strategy, for example, recognises the contribution they can make to environmental net gain in new development. These approaches for improving resilience can also provide other environmental benefits, such as recreational and amenity benefits. This is recognised by the Strategy in support of creating better places for people and wildlife.

## 3.10. Cumulative effects

### 3.10.1. Summary of effects

The environmental report considers potential cumulative effects by looking at the:

- inter-relationships between different environmental topics
- interaction between the Strategy and other relevant national plans, policies and programmes

The environmental report identifies a number of positive inter-relationships across the topics considered in the assessment. This includes the positive effects on climate change adaptation. This is reflected, for example, in topics on climatic factors, material assets and population and human health. Also recognised are the beneficial effects of risk management actions that work with natural process, use natural flood management and encourage sustainable land management. This underpins a number of inter-relationships between topics on biodiversity and water as well as resource management and material assets.

The environmental report highlights that managing flooding and coastal change could potentially lead to a focus of risk management activities in particular areas. Depending on the local area and the combination of resilience tools used, this could have positive and negative effects on the local environment. The environmental report recognises the benefits for local communities of increasing the link between risk management and economic growth. It highlights that in some areas this could serve to further increase development pressure with potential effects on the environment.

Overall, the environmental report concludes the Strategy is supportive and aligns well with other relevant national strategies. In particular, it strongly aligns with the commitments set out in the 25 year environment plan.



### **3.10.2. Proposed mitigation and enhancement**

Mitigation and enhancement proposals outlined in the environmental report include:

- the use of adaptive approaches to inform the long term strategic planning of places
- the consideration, where appropriate, of future economic development in the assessment of local level risk management plans and strategies

### **3.10.3. How proposals have been taken into account in finalising the Strategy**

We have reinforced the importance of long term, strategic planning for creating climate resilient places. This includes our role in helping with strategic planning in areas of significant risk of flooding and coastal change. The Strategy also encourages RMAs to invest in planning skills and capabilities to support their role in influencing plans and development.

The Strategy recognises that many risk management plans, strategies and projects will be informed by local level assessments. These are at a more appropriate scale to consider any consequential effects of future development arising from investment in managing flooding and coastal change.

## **3.11. Summary of general mitigation and enhancement proposals**

### **3.11.1. Proposed mitigation and enhancement**

A number of mitigation and enhancement proposals were similar across most of the SEA topics considered in the assessment. These included the following themes:

- engaging with environmental organisations and stakeholders at the national and local level to support the implementation of the Strategy
- embedding environmental and sustainability considerations into local level engagement with communities
- including environmental and sustainability aspects in future skills, training and professional development
- supporting the input of environmental specialists to local decision-making on risk management
- seeking to ensure new ways of funding and financing provide environmental benefits together with managing the risk of flooding and coastal change
- using our strategic overview role to enable and champion risk management solutions that provide multiple benefits for the environment, sustainable development and climate change
- incorporating environmental and sustainability considerations in supporting guidance for risk management authorities

The environmental report also recognises that RMAs will need to comply with legal requirements for protecting and enhancing the environment. This includes undertaking, in many cases, local level environmental assessments of risk management plans, strategies and projects. These local level assessments will help to identify ways in which to avoid, reduce or mitigate for any potential negative effects. They can also help to identify opportunities for enhancing the environment of a place.

### **3.11.2. How proposals have been taken into account in finalising the Strategy**

The Strategy recognises that RMAs are required to comply with environmental legislation when undertaking their activities. It also encourages RMAs to contribute to improving the

natural, built and historic environment through their investments in flood and coastal projects.

The Strategy recognises that many local level strategies and projects will undergo separate environmental assessments. Assessments at the local level will be at a more relevant scale to identify potential positive and negative effects on the environment in different places. Local level assessments also provide the opportunity for engaging environmental stakeholders and using data relevant to the local area. This can help to inform place specific mitigation measures for any negative effects and opportunities for enhancing positive effects.

In the preceding sections we have outlined the changes made to expand on the importance of working with other organisations and stakeholders. This includes engaging with other government departments and agencies, community groups, and catchment partnerships. Catchment partnerships bring together a range of organisations, RMAs and land managers, including environmental stakeholders.

We also outline how we have expanded on our ambition for a nation ready to respond and adapt to flooding and coastal change. This includes a commitment to share learning and best practice on working with communities. The Strategy also recognises the importance of two-way communication and learning between RMAs and local people. We envisage that environmental and sustainability considerations will be an important part of this engagement.

The Strategy includes further information on partnership funding. This includes an outline of the approach to funding and recent changes. One of the changes involves revising environmental payments to better account for the additional environmental benefits provided by risk management schemes. The Strategy also reflects the government's aims for certain developments to achieve biodiversity gain and how this will apply to RMAs.

We have further developed the Strategy to ensure the flood and coastal change sector have the necessary skills and capabilities. The Strategy recognises this includes a wide range of specialists, including environmental specialists. Looking to the future, we have also expanded the Strategy's support for incorporating flooding and coastal change in education. This includes links to environmental subjects. The Strategy also encourages the sector to invest in continual learning. We envisage this would encompass environmental aspects.

The Strategy includes further information on the roles and responsibilities of RMAs. This explains that all RMAs have a duty to cooperate with each other and to share information. We have also outlined in more detail our strategic overview role. An important part of our role is sharing data, information and tools on flooding and coastal change. We also give advice to RMAs on how investments in flooding and coastal change can provide integrated solutions that protect and enhance the environment. Additionally we plan to work with partners on flood and coastal research and share learning and best practice.

Government guidance to the Environment Agency and other RMAs sets out our contribution to sustainable development. The Strategy indicates we will update guidance for RMAs on various subject areas, including appraisal guidance and flood risk assessments. We envisage this will provide the opportunity to embed relevant ambitions of the 25 year environment plan for the natural, built and historic environment. Further details on planned updates to guidance will be provided in the action plan.



## 4. How opinions expressed in response to the consultation have been taken into account

### 4.1. Introduction

The consultation on the draft Strategy and the SEA environmental report took place between May and July 2019. The consultation included 3 questions on the environmental report. The questions asked the following:

- do you agree with the conclusions of the environmental assessment
- are there any further significant environmental effects (positive or negative) of the draft strategy you think should be considered
- are there further mitigations for potential negative effects or opportunities to achieve positive effects that should be considered for the final national FCERM strategy

Respondents were able to answer yes or no to the questions and provide additional written comments for explanation. There were over 130 responses to the questions on the environmental report. Of these responses, just over half provided additional written comments to one or more of the questions.

A wide range of respondents commented on the environmental report. Respondents were represented across the public, private and voluntary sectors. This included responses from Historic England and Natural England who are the statutory consultation bodies in England for the SEA. Responses were also received from Scottish Natural Heritage, Historic Environment Scotland and the Scottish Environment Protection Agency (SEPA). Natural Resources Wales (NRW) was also consulted to ensure any potential cross border effects were taken into account.

The SEA did not identify any significant environmental effects that required trans-boundary consultation on the Strategy. Due to this, no consultation responses were received via this consultation route.

This section only refers to the views expressed in relation to the SEA environmental report. It summarises the main issues raised in the consultation and how we have taken them into account in finalising the Strategy.

A [consultation response summary document](#) provides a full outline of the responses received on the draft Strategy. It also outlines how we took them into account in finalising the Strategy.

A draft habitats regulations assessment (HRA) was also consulted on alongside the draft Strategy. One response was received from Natural England on the draft HRA. Natural England have been involved throughout the preparation of the final HRA. For further information on how the HRA was undertaken and its findings please see the [final habitats regulations assessment](#).

### 4.2. Question 1 on the results of the assessment

This consultation question asked:

- do you agree with the conclusions of the environmental assessment

### 4.2.1. Main issues

The vast majority of respondents (79%) agreed with the conclusions of the environmental assessment. A number of specific points were raised in instances where respondents did not agree with or partly agreed with the findings. Some of these related to the assessment, whilst others were more to do with the content of the draft Strategy.

Several respondents acknowledged the high level approach of the assessment because of the national context of the Strategy. It was recognised that potential environmental effects will depend on the local context and these are more appropriately assessed at the local level. Support was also expressed for the precautionary approach of the assessment.

The main issues raised mainly by individual responses related to the:

- consideration of climate change
- approach to environmental net gain
- emphasis placed on strategic planning
- need for more research on the impact of the Strategy on people
- spatial distribution of potential impacts
- role of floodplain species rich grassland in natural flood management
- effects on heritage assets where standards of protection are not sustained
- monitoring framework and taking account of the uncertainty of some effects at the national scale

A few responses expressed concern at the potential negative effects on biodiversity. One respondent thought the potential for positive effects on biodiversity might be better reflected if the assessment separately grouped environmentally related measures. A few respondents thought that a number of impact types and their effects could be different depending on the local context.

### 4.2.2. Our response

The Strategy is underpinned by the latest research on climate change provided by the UK Climate Change Projections (UKCP18). We have added a new section in the Strategy on the changing climate. It outlines the findings of recent research on climate change. It also sets the context for why the Strategy is seeking to mitigate and be more resilient and adaptable to a changing climate.

The Strategy retains a clear commitment to encouraging environmental net gain in new development. This supports the ambitions of the 25 year environment plan and leaving the environment in a better state than we found it. We have included examples of how this could be achieved. This includes the use of SuDs and natural flood management. We have also added references to other environmental benefits, as for example, relating to the natural, built and historic environment.

We have expanded the Strategy's content on strategic planning. An example of this is the inclusion of additional information on the role of RMAs in planning. We have also added a new section that describes our role as a place shaper and a statutory advisor on planning matters. Additionally, we have updated the Strategy so that it refers to relevant government planning policy and advice.

The Strategy continues to put people and places at the heart of decision-making for planning and adapting to future flooding and coastal change. To support this we have expanded on our ambition for a nation of climate champions. We have included an outline of recent research on how communities and RMAs can best work together. We have also



added more measures to achieve this. An example of this is the commitment to share learning and best practice on working with communities. We have also strengthened the Strategy's content on the effects of flooding and coastal change on health and wellbeing.

We consider the assessment, as described in the environmental report, is proportionate to the national context of the Strategy. The Strategy recognises that many local level strategies and projects will undergo separate environmental assessments. These are at a more relevant scale to consider the potential spatial effects of managing flooding and coastal change in different places.

The environmental report outlines potential positive and negative effects on biodiversity. For the assessment we grouped the Strategy's measures into 4 broad themes. We felt this helped to assess potential effects on the environment and biodiversity in an integrated way. Overall, we adopted a precautionary approach to the assessment of potential effects on biodiversity. In doing so we also took account of the precautionary approach reflected in the HRA. Assessments at the local level will be at a more relevant scale to identify potential positive and negative effects on biodiversity in different places. They will identify place specific mitigation measures to avoid, reduce and as fully as possible offset any significant negative effects. They can also identify opportunities to enhance potential positive effects.

We acknowledge that potential effects on the environment can be different depending on the local context. They can also vary depending on the type and combination of risk management activities being planned. For this reason we have ensured the Strategy refers to the role of local level assessments. Many strategies and projects for managing flooding and coastal change will be informed by assessments at the local level. These can assess in more detail potential effects on the environment of different risk management activities in different places. This includes potential impacts on the historic environment and local habitats.

In section 6 we set out the actions we plan to undertake in relation to monitoring the significant environmental effects of the Strategy. These take forward proposals set out in the environmental report. We consider it important to focus monitoring on aspects where the Strategy is likely to have significant environmental effects. This meets the requirements of the SEA regulations. We acknowledge the assessment identified some uncertainties in assessing potential effects at a national level. Other organisations are responsible for monitoring environmental data at a national level. We will continue to work with such organisations so that relevant information can help inform the Strategy's implementation and future reviews.

### **4.3. Question 2 on potential environmental effects**

This consultation question asked:

- are there any further significant environmental effects (positive or negative) of the draft Strategy you think should be considered

#### **4.3.1. Main issues**

Over a half of respondents did not identify any further significant environmental effects of the draft Strategy that needed to be considered. Additional suggestions were identified by just over a third of respondents. There was no overall trend in the points raised. Comments were spread across a range of topics with some more related to the content of the draft Strategy.

Several respondents agreed with the potential positive effects of working with natural processes, natural flood management, managed alignment and SuDs. One respondent acknowledged the need for assessments at the local level because of the variation of

places and how they could be affected by different risk management activities. The benefits of early engagement with catchment partnerships and other local stakeholders in helping to identify potential effects was highlighted by some respondents.

The main issues raised by responses related to potential effects on:

- designated landscapes, including National Parks and Areas of Outstanding Natural Beauty (AONB)
- landscapes in coastal areas, including the character of seascapes
- specific habitat types, non-native invasive species and opportunities for habitat creation
- air quality and noise
- carbon emissions
- health and wellbeing and the financial costs to individuals and communities

Additionally, Natural England clarified that in their view the tidal flooding of terrestrial/freshwater designated sites on the coast is not necessarily negative.

A few respondents expressed different views on climate change and future scenarios for global warming and rising sea levels. Several respondents commented on the risk of droughts and water shortages. Several also commented on the design and maintenance of existing risk management assets. As with question 1 the expansion of the monitoring framework was suggested to take account of the uncertainty of some effects at the national scale. Strategic planning considerations were also raised by some respondents, including the use of local catchment management plans and regulating development.

#### 4.3.2. Our response

The baseline to the assessment recognises designated landscapes. The environmental report outlines the reasoning for focusing the assessment on the character and quality of landscapes in general terms. It takes account of the purposes of National Parks and AONBs. It does this by explaining that potential impacts on designated landscapes are more likely to be associated with the Strategy's influence upon local strategies and projects. It also explains that local level assessments of these would provide a more appropriate way to assess potential effects. They provide, for example, the opportunity to use local data sets, such as landscape character assessments.

In coastal areas, we acknowledge that local data sets can also include seascape assessments. In finalising the Strategy we have taken account of marine policy documents. We consider it more appropriate for local level assessments to assess these factors in their local context. This is particularly in connection with shoreline management plans and coastal projects.

We have continued to engage with Natural England in the development of the Strategy. Building on this, we have included additional measures. One such measure focuses on Natural England working with RMAs to develop new approaches for conserving protected sites, species and natural landscapes. More generally, we have also expanded on the importance of working with other organisations and stakeholders. This includes engaging with other government departments and agencies, community groups, and catchment partnerships. Catchment partnerships bring together a range of organisations, RMAs and land managers. They include representatives from stakeholders at the local level. In relevant places this is likely to involve National Park authorities and those concerned with conserving and enhancing the natural beauty of AONBs.

In the section dealing with question 1, we acknowledge that potential effects on the environment can be different depending on the local context. They can also vary



depending on the type and combination of risk management activities being planned in different places. The environmental report recognises that many strategies and projects for managing flooding and coastal change will be informed by local level assessments.

We acknowledge that at the local level, it might be appropriate to consider potential impacts on air quality or noise. These local level assessments would also allow for more detailed assessments of potential effects on different habitats and species in particular places. To this end, we have added references in the Strategy to the role of local level assessments in informing decision-making on flooding and coastal change. The Strategy also recognises the need for RMAs to meet other environmental requirements when managing the risk of flooding and coastal change.

Natural England provided a clarification in their response to the consultation. This related to the potential effects of tidal flooding of terrestrial / freshwater designated sites on the coast. Natural England highlighted that potential effects will depend on the designated site. In some cases it can be beneficial to prevent tidal flooding and the effects of saline intrusion. In other places risk management solutions, with appropriate mitigation, can provide benefits for the environment. We have outlined the importance of local level assessments in informing risk management at the local level. We have also outlined how we have updated the Strategy to strengthen ongoing engagement between RMAs and Natural England.

The Strategy continues to put people and places at the heart of decision-making for planning and adapting to future flooding and coastal change. This is outlined in the section dealing with question 1. In setting out the roles and responsibilities of RMAs, we have expanded on the importance of working with other organisations and stakeholders. This includes engaging with other government departments and agencies, community groups, and catchment partnerships.

We have updated the Strategy to reflect the government's commitment to reach net zero carbon emissions by 2050. This includes a new section on the changing climate. The Strategy recognises the important role that RMAs can have in contributing to local initiatives for reducing carbon emissions. The Strategy provides some examples of how this can be achieved. This includes the use of natural flood management measures. We have also highlighted our commitment to become a net zero carbon organisation by 2030. Additionally, we will work with our supply chain on developing new ways to reduce carbon from the construction and operation of flood and coastal defences.

We have expanded the Strategy's content on health and wellbeing. An example of this is the additional information we have included in support of the Strategy's ambition for a nation ready to respond and adapt to flooding and coastal change. This includes a more detailed description of how flooding and coastal change can affect people. We have also included a specific measure which deals with people's health and wellbeing. Additionally, we have updated the Strategy's introductory section on creating better places for wildlife and people. This emphasises the importance of a healthy natural environment for everyone's health and wellbeing.

In the section dealing with question 1, we explain that the Strategy is underpinned by the latest research on climate change. We have added a new section in the Strategy on the changing climate. This outlines the main findings of recent research on climate change. The section also outlines the general scenarios the Strategy is working towards in terms of mitigating and being more resilient to climate change.

We have expanded and strengthened the Strategy's content on the sustainable management of water. This includes more measures to support the better coordination of strategic planning and investment across the water management sector. In particular, the

Strategy encourages water companies and other RMAs to work together in catchments to manage water in an integrated way. In doing so this can achieve benefits for flood and drought resilience as well as for the natural environment.

We have provided more information on the range of tools which people can use to improve resilience to flooding and coastal change. The Strategy recognises that maintaining our flood and coastal change infrastructure will remain a vital tool in many places.

The section dealing with question 1 describes how we have strengthened the Strategy's content on strategic planning. This includes our role as a statutory advisor on planning matters. We have also included a new section on future risk and investment needs. In this section, we explain in more depth government policy on regulating development in the flood plain. Elsewhere in the Strategy, we have also included references to catchment partnerships.

In the section dealing with question 1 we explain our general approach to monitoring the significant environment effects of the Strategy.

## **4.4. Question 3 on mitigation and enhancement**

This consultation question asked:

- are there further mitigations for potential negative effects or opportunities to achieve positive effects that should be considered for the final national FCERM Strategy

### **4.4.1. Main issues**

Over a half of respondents did not identify any additional mitigation measures or enhancement opportunities for the final Strategy. Additional suggestions were identified by a third of respondents. There was no overall trend in the points raised with comments spread across a range of topics. A number of these aligned with recommendations set out in the SEA environmental report.

Several respondents expressed support for measures that help to embed the principle of achieving environmental enhancements as part of risk management projects. The main suggestions for additional mitigation or enhancement related to:

- putting more emphasis on working with natural processes and a holistic approach to water management
- encouraging land management schemes to support practices that benefit flood risk management
- implementing actions in RBMPs
- expanding the content on environmental net gain
- providing more support for partnership working with communities and other stakeholders and improving engagement
- recognising other local stakeholders, such as catchment partnerships, local nature partnerships, National Parks and organisations responsible for AONBs
- strengthening planning policy on flood risk and climate resilience and its regulation
- undertaking further assessments, such as in relation to biodiversity or social impacts

A few respondents raised specific points on:

- relocating infrastructure
- modernising and maintaining risk management assets
- expanding support for flood resilience by insurance companies



As with previous questions a few respondents raised points on monitoring the Strategy. This included the framework for monitoring its significant environmental effects and the need for guidance on monitoring at the local level.

#### 4.4.2. Our response

We have developed further the support the Strategy gives to nature based solutions. This encompasses solutions that work with natural processes, including natural flood management approaches. The Strategy includes a more detailed explanation of the benefits of these types of solutions. The Strategy also encourages everyone in the sector to work together to use nature based solutions to reduce flood and coastal risk.

We have continued to work with partners in developing the Strategy, such as the National Farmers Union. Informed by this we have added a strategic objective and supporting measures on agriculture and land management. These encourage RMAs to work with farmers and land managers to help manage and adapt to the risks of flooding and coastal change.

We have updated the Strategy to include a direct reference to RBMPs. This is linked to the measure on ensuring that investments by RMAs in flood and coast defences help to achieve objectives set out in RBMPs.

We explain under the section dealing with question 1 that the Strategy retains a clear commitment to encouraging environmental net gain in new development. This supports the ambitions of the 25 year environment plan to leave the environment in a better state than we found it. We have included examples of how this could be achieved. This includes the use of SuDs and natural flood management. We have also added references to other environmental benefits, as for example, relating to the natural, built and historic environment.

We have strengthened the Strategy's commitment to working with communities and other stakeholders. This is outlined in the sections dealing with questions 1 and 2. It includes the sharing of learning and best practice on working with communities. We have also added a measure on the establishment of local flood groups and local flood plans. Furthermore, we have expanded on the importance of working with other organisations and stakeholders. This includes engaging with other government departments and agencies, community groups, and catchment partnerships.

The sections dealing with questions 1 and 2 provide examples of how we have increased the Strategy's content on planning.

The Strategy recognises that many local level strategies and projects will undergo separate environmental assessments. Assessments at the local level will be at a more relevant scale to identify potential positive and negative effects on the environment in different places. Local level assessments also provide the opportunity for engaging environmental stakeholders. This can help to inform place specific mitigation measures for any negative effects and opportunities for enhancing positive effects. As already explained, we have expanded on the importance of working with other organisations and stakeholders. This includes engaging with other government departments and agencies, community groups, and catchment partnerships.

Our assessment of the Strategy has considered a range of social aspects. This is described in the environmental report under such topics as population and human health, climatic factors and material assets. Local level assessments of risk management plans and strategies are at a more relevant scale to consider any place specific implications.

One of the main ambitions of the Strategy is for growth and infrastructure to be resilient to climate change. We have updated and added further information on this drawing on other

national reports and legal requirements. We have also incorporated relevant references to government planning policy and advice. This includes encouraging RMAs, planning authorities and others to work together in developing adaptive approaches for managing future climate risks.

In the section dealing with question 2 we explain that more information has been added on the range of tools available for improving resilience. This includes maintaining our flood and coastal change infrastructure. We have also expanded the Strategy's content on the responsibilities for operating, maintaining and managing flood and coastal defences. This includes:

- encouraging everyone to work together
- sharing information
- developing guidance

The Strategy recognises an important component of resilience is helping people and businesses to recover by 'building back better' after a flood. We have strengthened this aspect of the Strategy by including a new strategic objective and measures. RMAs are encouraged to work with the finance sector and others to increase the take up of property flood resilience measures.

Our approach to monitoring the significant environment effects of the Strategy is explained in the section dealing with question 1. This is set out in more detail in section 6. The Strategy also explains our general requirements for reporting on progress in achieving the objectives and measures set out in the Strategy.

## 5. Reasons for adopting the Strategy in its final form

### 5.1. Introduction

This section provides an outline of the main factors taken into account by the Environment Agency in finalising the Strategy. They are also the factors taken into account by the Secretary of State in approving the adoption of the Strategy in its final form.

The main factors taken into account include the:

- consultation responses to the draft Strategy
- changes made to the Strategy in response to the consultation
- findings of the SEA process as described in the environmental report, including the assessment of 'reasonable alternatives'
- consultation responses to the environmental report
- findings of the final HRA and their acceptance by Natural England

In section 5.2 below we summarise the main changes made to the strategy as informed by the consultation. In section 5.3 we outline the relationship to the SEA process.

### 5.2. The adopted Strategy

Section 2.3 explains how a collaborative and multi-stakeholder approach informed the overall development of the Strategy. The draft Strategy was subject to public consultation between May and July 2019. Following this we also continued to engage with partners on how best to respond to their comments.

In the adopted Strategy there are a number of changes introduced following consultation on the draft Strategy. Overall, the public consultation showed high levels of support for the approach and ambitions of the Strategy. The changes reflect areas where responses identified common themes for improvement or needed to be further clarified.

Some of the general changes we have made include:

- outlining in more depth the changing climate and the urgency to adapt to it
- expanding on the context for contributing to net zero and carbon mitigation
- improving clarity on all sources of flooding
- clarifying the roles and responsibilities of RMAs
- expanding on our strategic overview role
- underlining the importance of creating better places for people and wildlife
- providing more information on the data we plan to provide on future risk and investment needs

Under ambition 1 on climate resilience places, we have improved and strengthened the text in a number of areas. The Strategy, for example:

- explains in more depth flood and coastal resilience and adaptive approaches
- gives more prominence to coastal places
- provides more information on the use and benefits of nature based solutions in achieving flood and coastal resilience



- develops further the consideration of farming and land management

Under ambition 2 on growth and infrastructure, we have improved and strengthened the text in a number of areas. The Strategy, for example:

- underlines the importance of ensuring that new and existing infrastructure is resilient to flooding and coastal change
- explains in more depth government planning policy and advice
- outlines our role in the planning system
- clarifies how investments by RMAs in FCERM can help to support sustainable growth
- provides more information on environmental net gain and the 25 year environment plan
- describes in more depth the role of property flood resilience measures
- strengthens links between flood and coastal resilience and water company planning and investment

Under ambition 3, a nation ready to respond and adapt to flooding and coastal change, we have improved and strengthened the text in a number of areas. The Strategy, for example:

- reinforces the importance of putting people and places at the heart of decision-making on managing flooding and coastal change
- provides more support for engaging with and involving people and communities
- integrates the involvement of young people into the skills journey - ensuring we have the right skills in the right places to manage flooding and coastal change
- expands on the links between flooding and coastal change and mental health and wellbeing
- strengthens the importance of investing in all skills needed to manage flooding and coastal change
- provides more information on our role in supporting world leadership in flood and climate resilience

A [consultation response summary document](#) provides a full outline of the responses received on the draft Strategy. It also outlines how we took them into account in finalising the Strategy.

### 5.3. Review of the changes

We have reviewed the changes to the Strategy as part of the SEA process. The main purpose of this was to determine whether they could change the significant environmental effects identified in the assessment of the draft Strategy. These are described in the SEA environmental report. A short summary of the potential effects identified by the environmental report is included in section 3 of this statement of environmental particulars.

The environmental report also describes the approach we took to the consideration of 'reasonable alternatives'. This included:

- the 'do-nothing' alternative that was based on the evolution of the baseline environment in the absence of a revised Strategy
- alternatives in the development of the draft Strategy that drew on the different options for engaging and involving partners

The environmental report describes the reasons for rejecting the 'do-nothing' alternative. It also explains why we considered that there were no reasonable alternatives to the



Strategy as published for consultation. In the main this took account of the collaborative approach to the development of the Strategy, including the involvement of stakeholders at the earliest stage in the plan-making process. This ensured a wide range of ideas were considered as an integral part of the engagement process. The environmental report explains how through this early engagement process these ideas were discounted due to:

- not having stakeholder support
- not being within our or others' powers to deliver
- not being sufficiently ambitious for a national strategy intended to respond to the challenge of climate change
- otherwise not achieving our objectives for updating the existing Strategy

We have already highlighted the public consultation which showed high levels of support for the approach and ambitions of the Strategy. This endorses the environmental report's conclusions on the assessment of alternatives and its approach to assessing the Strategy's potential significant environmental effects.

A substantial proportion of the changes to the Strategy are associated with additions to the supporting text or narrative. In some places the supporting text has also been restructured. These changes have primarily sought to provide additional information and help clarify aspects following on from the consultation responses. An example of this is the addition of further information on the roles and responsibilities of RMAs. Another example is the provision of more detailed outlines of resilience, available actions and adaptive approaches for strategic planning.

Some of the strategic objectives and their supporting measures have also been modified or expanded upon. These changes take into account the consultation responses and further engagement with partners.

As outlined in sections 3 and 4, many of the changes are supportive of the recommendations outlined in the environmental report for mitigation and enhancement. The changes also build on the consultation responses to the environmental report. Examples of this include the:

- addition of further information on climate change mitigation and achieving net zero carbon emissions
- strengthened encouragement for using nature based solutions and the benefits they can provide
- development of further measures on agricultural and land management
- increased prominence given to SuDs and other environmental benefits in contributing to environmental net gain
- recognition given to the health and wellbeing of communities
- importance of engaging with people and communities in an inclusive way
- importance of working with other government agencies, including Natural England and Historic England
- development of skills, capabilities and training for all those involved in risk management
- role of local level environmental assessments in informing decision-making

We have concluded that the changes made to the Strategy do not materially affect the conclusions of the SEA process. This takes account of the nature of the changes and how they relate to the consultation on the Strategy and the environmental report. It also takes

into account the changes made in response to the environmental report's recommendations for mitigation and enhancement.

In addition, we have prepared a final HRA to assess potential effects on European sites. We have continued to work with Natural England in preparing the final HRA. We have taken into account the mitigation measures identified by the HRA in finalising the Strategy.

Overall, we consider the changes made to the Strategy are covered by the findings of the SEA, HRA and consultation processes.

## **5.4. Implementation of the adopted Strategy**

Alongside the Strategy the Environment Agency will develop an action plan for taking the Strategy forward. This will set out activities which will be undertaken, between 2020 and 2025, by the Environment Agency, RMAs and other partners.

The next review of the Strategy is planned for 2026, but the vision and approaches described are intended to establish an approach capable of being pursued and adapted over the longer term. The Environment Agency will undertake the review, working closely with other RMAs, government, business, communities and other partners.

## 6. Monitoring

### 6.1. Monitoring of significant environmental effects

The Strategy explains our requirements for reporting on progress in achieving the objectives and measures outlined within the Strategy. An outline of the main reporting activities is set out in Annex B of the Strategy.

This section sets out the actions we plan to undertake in relation to monitoring the significant environmental effects of implementing the Strategy. These take forward proposals set out in the SEA environmental report.

The monitoring actions outlined link to monitoring arrangements that are already undertaken or planned in the development of policy and risk management activities. This is because it needs to be practical, cost-effective and strategic.

We acknowledge that it will not be possible to determine whether any changes in these factors can be directly attributed to the implementation of the strategy. This is because there are too many other influences on environmental outcomes for a direct relationship to be identified. We consider it reasonable, however, to monitor the main environmental outcomes to determine whether any adjustments to the Strategy are needed in the future.

The topics we plan to monitor due to their likely significant environmental effects as outlined in the environmental report are:

- population and human health
- biodiversity
- climatic factors
- material assets

### 6.2. Population and human health

The Environment Agency is required to report to the Minister about flood and coastal erosion risk management. Data on the changes in the number of properties and businesses at risk of flooding or coastal erosion is already collected. This includes data on changes in flood risk for deprived communities.

### 6.3. Biodiversity

The Environment Agency already undertakes annual monitoring of the length of rivers improved. This is undertaken to help show progress toward meeting objectives for the water environment as set out in RBMPs. Additionally, we currently monitor the area of habitat created or improved by investment in managing flooding and coastal change. Further to this we anticipate continuing to improve the reporting of environmental outcomes associated with managing flooding and coastal change. As the sector moves towards biodiversity gain we will also need to consider monitoring arrangements for this across our programmes of work.

The Environment Agency also reports periodically on compensatory habitat created to offset losses in internationally protected areas in England. This is linked to the Habitat Compensation Programme which monitors long-term habitat change at a regional level. The programme also identifies potential sites for further habitat creation.



## 6.4. Climatic factors

One of the main purposes of the Strategy is to enable adaptation to the flooding and coastal change consequences of climate change. As such we anticipate this will be covered under the general reporting requirements and the development of monitoring arrangements for the strategy. Additionally under the Climate Change Act 2008 we can be required to report to Defra on climate change adaptation.

Our commitment to be net zero carbon by 2030 will also require the development of appropriate organisational monitoring arrangements.

## 6.5. Material assets

We anticipate risk to property and infrastructure will be covered under the general reporting requirements and the development of monitoring arrangements for the Strategy. It is anticipated that this will also include future information on land management practices and their contribution to managing flooding and coastal change.

## 6.6. Other monitoring sources

The environmental report explains that we do not intend to monitor the following topics:

- resource management
- water (apart from aspects already explained in section 6.3)
- cultural heritage
- landscape

This is because no likely significant effects at the national level were identified by the assessment.

We recognise, however, that other organisations are responsible for monitoring environmental data at a national and local level. We will continue to work with such organisations so that relevant information on these topics can help inform the Strategy's implementation and future reviews.

## 7. List of abbreviations

AONB	Area of outstanding natural beauty
FCERM	Flood and coastal erosion risk management
HRA	Habitats regulations assessment
RBMP	River basin management plan
RMA	Risk management authority
SEA	Strategic environmental assessment
SOEP	Statement of environmental particulars
SuDs	Sustainable drainage systems

## 8. Glossary

### A

#### **Appraisal guidance**

The Environment Agency's appraisal guidance sets out how to investigate ways to make communities and places more resilient to flooding and coastal change. The appraisal process identifies ways to deliver wider benefits for people, infrastructure, the economy and the environment as well as opportunities for attracting other sources of funding through partnership funding.

#### **Adaptation**

Adaptation means anticipating appropriate action to prevent or minimise the likelihood and consequences of flooding and coastal change. It has been shown that well planned, early adaptation action saves money and lives later.

#### **Adaptive approaches or pathways**

Adaptive pathways enable local places to better plan for future flood and coastal change and adapt to future climate hazards. They can also be referred to as strategic investment pathways. This means being agile to the latest climate science, growth projections, investment opportunities and other changes to our local environment. They better equip practitioners and policy makers to make the best decisions, taken at the right time to benefit people, infrastructure, the economy and the environment. Adaptive pathways should plan out to 2100 and beyond.

### B

#### **Biodiversity gain**

An approach to development that aims to leave the natural environment in a measurably better state than beforehand, by creating or enhancing habitats.

### C

#### **Catchment**

The area from which precipitation contributes to the flow from a borehole spring, river or lake. For rivers and lakes this includes tributaries and the areas they drain. In river basin management this can refer to the larger management catchments and the smaller operational catchments.

#### **Climate change**

The large-scale, long-term shift in the planet's weather patterns and average temperatures.

#### **Climate resilient places**

Places that are resilient to future flooding and coastal risks. This involves the capacity of people and places to plan for, protect for, respond to, and recover from flooding and coastal change. Places can achieve this by making the right land use and development choices, better protecting against flooding and coastal change, responding to and recovering quickly to extreme events, whilst taking actions to adapt to a changing climate.

#### **Coastal change**

Within this document we use the term coastal change to refer to the risks of coastal erosion and sea flooding and land slips.



## **Collaboration**

In the context of the strategy, it describes the way everyone needs to work together to successfully manage risk from flooding and coastal change.

## **D**

### **Department of Environment, Food and Rural Affairs (Defra)**

Government department responsible for safeguarding our natural environment and setting environmental policy.

## **E**

### **Enhancement measure**

In the context of the SEA environmental report, this refers to measures to improve likely positive effects.

### **Environmental Land Management scheme (ELMs)**

A scheme which will replace countryside stewardship and the basic payment scheme after we leave the European Union. Those who are awarded ELM agreements will be paid public money in return for providing environmental benefits.

### **Environmental net gain**

Net gain is an approach to development that aims to leave the natural environment in a measurably better state than beforehand. Net gain is an umbrella term for both biodiversity net gain and wider environmental net gain. The aim of wider environmental net gain is to reduce pressure on and achieve overall improvements in natural capital, ecosystem services and the benefits they deliver.

## **F**

### **Flooding**

Within this document we use the word flooding to refer to a natural event where there is an overflow of water from the ground, river or the sea, or where there is a build-up of water from run-off in urban or rural areas.

### **Flood and coastal erosion risk management**

Managing the risks of flooding and coastal erosion to people, property and the natural environment through minimising, predicting and managing the risk.

## **G**

### **Green infrastructure**

Green infrastructure includes a range of environments, such as parks, playing fields, woodland, street trees, rights of way, allotments, canal towpaths, green walls and roofs. Many of these green spaces can be associated with the water environment, including rivers, streams, lakes, canals, ponds and the coast.

## H

### **Habitat Compensation Programme (HCP)**

A national network of regional programmes set up by the Environment Agency to coordinate and oversee habitat creation projects to ensure that the flood and coastal risk management programme meets its legal obligations to habitats and species arising from the Habitats Regulations (2017).

### **Habitats regulations assessment**

The Conservation of Habitats and Species Regulations 2017 require an assessment to be undertaken on the potential implications for European sites. This is known as a habitats regulations assessment (HRA). The requirement applies to the following designated sites:

- Special Areas of Conservation (SACs) and candidate SACs (cSACs)
- Special Protection Areas (SPAs)
- Sites of Community Importance (SCIs)

As a matter of government policy, it also applies to:

- potential Special Protection Areas (pSPAs)
- Ramsar sites (sites designated under the 1971 Ramsar Convention for their internationally important wetlands)
- sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites

## I

### **Infrastructure**

The basis systems and services, such as transport (i.e. roads and railways) and power supplies, that a country or organisation uses to work effectively.

## M

### **Mitigation measure**

In the context of the SEA environmental report, this refers to measures to prevent, reduce or as fully as possible offset any likely significant negative effects.

## N

### **Natural flood management (NFM)**

The use of natural processes to reduce the risk of flooding or coastal change. For example by; restoring bends in rivers, changing the way land is managed so soil can absorb more water and creating saltmarshes on the coast to absorb wave energy. It is one of the nature based solutions which can be used in conjunction with more traditional engineering techniques.

### **Nature based solutions**

Nature based solutions (NbS) are actions to protect, manage or restore nature or modified ecosystems to help address societal and environmental challenges, such as global heating, coastal erosion and flooding.

Nature based solutions involve a range of local activities, often undertaken through partnerships between risk management authorities, farmers, landowners, environmental

groups and communities. In some places, solutions involve making space for water away from vulnerable development. Examples include, reconnecting rivers with their natural floodplain or creating new areas where water can be stored.

## P

### **Precautionary approach**

Applied to decision-making where there are uncertainties and/or lack of knowledge and there is potential for serious or irreversible environmental harm.

### **Property flood resilience**

Measures people can take to help keep flood water out of their home or business; or limit the damage if it does. Examples include flood gates over doors, tiled floors or raised plug sockets.

## R

### **Resilience**

The capacity of people and places to plan for, protect for, respond to, and recover from flooding and coastal change. Places can achieve this by making the right land use and development choices, better protecting against flooding and coastal change, responding to and recovering quickly to extreme events, whilst taking actions to adapt to a changing climate.

### **River basin management plans (RBMPs)**

Plans, developed by the Environment Agency, which set out how organisations, stakeholders and communities will work together to improve the water environment.

## S

### **Significant environmental effect**

The SEA of the strategy, assessed whether potential effects on the environment were likely to be significantly positive or significantly negative at a national scale. It also considered, whether on balance effects were not likely to be significant or neutral at a national scale.

### **Strategic environmental assessment**

Strategic environment assessment (SEA) is undertaken to ensure that the environment is considered during the development of a plan or strategy. It helps to ensure environmental issues are fully integrated into the plan making process alongside technical, economic and other factors. In doing so it can contribute to the promotion of sustainable development and environmental protection.

### **Strategic environmental assessment (SEA) environmental report**

In the context of this document, the SEA environmental report sets out the findings of the strategic environmental assessment. It outlines the likely significant environmental effects of implementing the strategy and any reasonable alternatives. It identifies mitigation measures to prevent, reduce or as fully as possible offset any likely significant negative effects. It also identifies enhancement measures to improve likely positive effects.



## **Strategic planning**

The term 'strategic planning' refers to policies that address larger than local issues.

## **Sustainable drainage systems (SuDs)**

Approaches to manage surface water that take account of water quantity (flooding), water quality (pollution), biodiversity (wildlife and plants) and amenity are collectively referred to as sustainable drainage systems (SuDs). SuDs mimic nature and typically manage rainfall close to where it falls. SuDs can be designed to transport (convey) surface water, slow runoff down (attenuate) before it enters watercourses. They provide areas to store water in natural contours and can be used to allow water to soak (infiltrate) into the ground or evaporated from surface water and lost or transpired from vegetation (known as evapotranspiration).

## **U**

### **UK Climate Change Projections (UKCP18)**

Climate predictions produced by the met office which provides the most up-to-date assessment of how the climate of the UK may change over the 21<sup>st</sup> century.

## **W**

### **Water body**

A unit of surface water, being the whole (or part) of a stream, river or canal, lake or reservoir, estuary or stretch of coastal water. A groundwater water body is a defined area of an aquifer with geological and hydrological boundaries to ensure consistency and avoid fragmentation.

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