



South West River Basin District
Second Cycle Flood Risk
Management Plan – Strategic
Environmental Assessment: Non-
Technical Summary

For external consultation October 2021

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 cannot do this alone. We work as part of the Defra group (Department for Environment, Food and 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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Non-technical summary

This is a summary of the environmental report for the [draft second cycle Thames Flood Risk Management Plan](#) (FRMP). The environmental report presents the results of a strategic environmental assessment (SEA) carried out as part of the preparation of the draft second cycle FRMP. The environmental report and this summary must be published with the draft plan so that people can understand and comment on how the environmental effects should be considered in the development of the final FRMP.

The draft second cycle South West Flood Risk Management Plan

The draft second cycle FRMP is a plan to manage significant flood risks in the Flood Risk Areas (FRAs) and a strategic area identified in the South West river basin district (RBD). Producing the second cycle FRMP for these areas is a requirement of the Flood Risk Regulations (2009).

However it is recognised that there are areas at risk of flooding outside of these FRAs. The Environment Agency, lead local flood authorities and other risk management authorities (RMAs) will continue to plan for and manage the risk of flooding to all communities. The draft plan has therefore been expanded to also show what is happening in other areas of the RBD that are outside of FRAs.

The Environment Agency worked together with other RMAs in the RBD to develop the first cycle FRMP in 2015. This was to create a plan to manage the risk from all sources of flooding. The second cycle FRMP will build on this approach and is closely aligned with the third cycle South West River Basin Management Plan (RBMP) and Shoreline Management Plans (SMPs).

The ambition is for the second cycle FRMP to be a strategic, place-based plan that shows what is happening in flood risk management across the RBD. It is closely aligned with the:

- Government's 25 Year Environment Plan
- Environment Agency's National Flood and Coastal Erosion Risk Management Strategy for England

The second cycle FRMP will encourage closer ways of working and partnerships between RMAs that will help to achieve revised objectives and updated or new flood risk management measures.

A glossary of terms and abbreviations can be found in end sections of the main environmental report.

Strategic Environmental Assessment

The environmental report provides a description of the strategic environmental assessment (SEA) process that was undertaken to fulfil the legal requirements of the Environmental Assessment of Plans and Programmes Regulations (England) (SI 2004 1633). SEA enables us to develop plans that will lead to better environmental protecting and more sustainable environmental outcomes.

The environmental report sets out the assessment of the likely significant environmental effects of implementing the measures in the draft plan. To ensure the SEA focused on the likely significant effects of the draft plan, a scoping phase was undertaken at an early stage. In consultation with local and national specialists within the Environment Agency, the scoping concluded that significant effects on air quality were unlikely and therefore this topic was 'scoped out.' The draft plan has the potential to have significant effects on the other environmental topics was identified, including:

- biodiversity
- population and human health
- soil
- water
- climatic factors
- material assets
- cultural heritage
- landscape

The measures of the second cycle FRMP were then assessed against the criteria of each environmental topic for the significant effects of the draft plan.

Reasonable alternatives to the plan that have been considered are outlined below. The environmental report considered other policy and legislation that it needed to. It also identified environmental issues and trends that provide a context for the second cycle draft plan. National and local plans, policies and programmes are identified in Annex A and B of the environmental report.

Where negative effects were predicted, the environmental report identifies mitigation actions to avoid, reduce or manage these negative effects. Where opportunities to increase the positive effects are identified, these enhancement opportunities were also recorded in the environmental report. The SEA also considers the cumulative effects of the draft plan by assessing potential effects due to interactions with other plans, programmes or policies at the river basin scale. The report sets out proposals for monitoring the significant environmental effects during the implementation of the FRMP measures.

The environmental report, and the SEA process, aims to be proportionate to the context of the draft plan, avoiding duplication of other assessments that may be required in taking forward measures. For example, environmental assessments of individual measures at the strategy or project level have been excluded from detailed assessment to ensure environmental implications are considered more locally in future 'decision making' processes. They have been included in the whole plan and cumulative assessment sections of the SEA. The FRAs and strategic area are the focus of the key locations assessment, alongside an assessment of the plan as a whole.

Assessment of alternatives

As part of the assessment consideration was given to possible alternatives to the draft strategy. This included looking at a 'do nothing' alternative that assumed no action is taken to revise the first cycle FRMPs. This alternative was rejected because the [Flood Risk Regulations 2009](#) (FRRs) require the FRMPs to be reviewed and revised every 6 years.

The assessment of alternatives also considered options for developing FRMPs. In preparing the first cycle FRMPs a 3-month consultation on how the plans should be developed was undertaken. The consultation presented 3 strategic options relating to development of the FRMPs including. As a result of the consultation it was agreed that a consolidated plan would be developed in partnerships with lead local flood authorities and other RMAs. As the FRRs require the second cycle FRMPs to review, update and build on the first cycle plans, the same strategic approach has been taken to develop the second cycle FRMPs.

At the individual plan level place-based alternatives were considered. The approach to developing and agreeing the objectives and the measures to be included in the draft FRMP differed between RBDs. Some held face to face or virtual workshops while others developed and refined measures via technical correspondence. In all cases the views of environmental and SEA specialists were central to this process, helping to shape and influence the plans and the measures which they comprise.

The proposed measures of the draft FRMP for the South West river basin district aim to build on first cycle FRMPs in setting out the future flood risk management needs. At the RBD scale they tend to set preliminary actions for the future investigation and development of business case appraisals and options. As such, further planning processes and supporting environmental assessments will focus on alternatives at these programme and project levels.

Environmental context

The South West river basin district (South West RBD) covers an area over 21,000km² and includes the counties of Devon, Cornwall, Somerset and Dorset as well as parts of Hampshire and Wiltshire. The Isles of Scilly and Lundy Island are also included in the RBD. The South West RBD is home to around 5.4 million people. The RBD has a long stretch of coastline at approximately 1,000km. The RBD has the lowest population density of any English region, which fluctuates seasonally due to a thriving tourist industry.

All local government authorities in the South West RBD, apart from Bournemouth, Christchurch and Poole Council, have declared a climate emergency. More than 20,000 properties are at high risk of flooding from rivers and the sea in the RBD.

The environment of the South West RBD is made up of a wealth of landscape and seascapes ranging from dramatic uplands, rocky coastlines, rolling hills, verdant river valleys, expansive estuaries and coastal plains, to dunes and beaches. Twelve Areas of Outstanding Natural Beauty (AONB) are designated for their distinct landscape characteristics which have shaped much of the RBD's heritage and population growth.

The complex mosaic of both natural and manmade landscapes features here in the South West RBD collectively form a landscape that is rich in character. The rural

landscape with 80% of the land under agricultural use and just 6% as defined as urban. The central urban hubs like Plymouth, Exeter, Taunton and Yeovil are separated by vast areas of rural land often occupied by smaller villages and commuter towns.

Terrestrial and water environmental supports an array of protected species as well as priority species and habitats listed under the NERC Act 2006. Many of these are dependent on the water environment, including water quality and water levels to support ongoing life. Designated spaces include Ramsar, Special Protected Areas (SPAs), Special Areas of Conservation (SACs), National Nature Reserves (NNR) and Local Wildlife Sites (LWS).

For example, the Somerset Levels and Moors is the largest inland wetland lowland in the country, internationally recognised as a Ramsar site and SPA for its assemblages of wildfowl. Of the European protected sites in the RBD, many of the designated space area water dependant, and near agricultural and urban land.

Archaeology is of great significance in the South West RBD. A strong sense of the cultural heritage is associated with the wealth of designated and non-designated archaeological remains which provide the evidence of past human interaction with and utilisation of the landscape. As a mainly rural region, this ranges from agricultural activity surviving as historic farming settlements and their surrounding intricate pattern of ancient fields, to the exploitation of mineral resources, as well as the commercial hubs often established on key rivers.

The local economy of the South West RBD is supported by business, transport, health, tourism, recreation as well as manufacturing, mineral industries and the operation of commercial ports. Important infrastructure includes the rail and motorway network. Motorways provide links from the South West to the West Midlands, Wales and London.

Growth and development pressures within the South West RBD are particularly associated with the major towns and cities. This is also an increasing issue for the wider settlement network of market towns and villages. Other development pressures include development of new towns and villages, and transport infrastructure.

There are 9 management catchments in the South West RBD. A management catchment is an area with several, often interconnected, water bodies. The water body types within these management catchments comprise rivers, canals, lakes, estuarine and coastal waters and groundwater bodies.

There are 17 FRAs designated for significant risk of flooding from rivers and sea and 2 FRAs designated for significant risk of flooding from surface water.

The South West RBD is also home to the Somerset Levels and Moors (SLM) strategic area. The SLM is a unique manmade wetland area central to the South West RBD. Communities living in this area are prepared for flooding from rivers and the influence tide-locking has on the flood risk within the strategic area.

Existing environmental problems and issues

The environmental report outlines existing environmental issues across the South West RBD and likely changes in the environmental context in the future.

The environment is facing a range of pressures across the RBD. This includes, but not exhaustively:

- a growing population and expansion of urban areas into difficult landscapes to develop in
- agricultural intensification to meet the demand of a growing and transient population
- land management practices which affect pollution levels in rural and urban areas, and the quality and availability of water as a resource for drinking, recreation and wellbeing
- increase in frequency and severity of flood events that will impact infrastructure, businesses, trade and those in vulnerable locations like coasts and estuaries
- direct and indirect loss of cultural heritage and archaeology resulting from rising sea level, intensification of flood events and unmitigated development
- maintenance and management of flood risk assets, the viability of building new schemes and feasibility of sustainable asset management
- impacts of flooding on landscape character resulting from increased vulnerability of some landscape types to rainfall
- pressure on biodiversity in response to climate change affecting water and terrestrial habitats and species

There is increasing public concern over the loss of biodiversity and policies such as biodiversity net gain and working with natural processes to renaturalise watercourses and the floodplain, may help to mitigate some biodiversity losses.

Internationally and nationally designated sites are likely to maintain their legislative Protecting. Therefore the increasing urbanisation of the South West RBD is unlikely to affect the geographical extents of these protected areas. Direct loss or fragmentation of habitat caused by development pressures may occur in areas outside protected sites.

Many government authorities have declared an ecological emergency. In the South West RBD, this includes Dartmoor and Exmoor national parks, both of which have declared an ecological emergency and the latter publishing the first National Park Nature Recovery Vision.

Relevant plans, programmes, policies and objectives

A review of relevant plans, programmes and policies at a national and local level was undertaken in the environment report. The main themes identified which will interact with the draft second cycle FRMP include:

- taking a strategic approach to managing and reducing flood risk
- adapting to a changing climate
- working in partnership to help communities prepare and recover from floods
- expanding the use of natural flood management solutions
- putting in place more sustainable drainage systems
- making 'at-risk' properties more resilient to flooding
- achieving environmental net gain as part of strategic development proposals
- responding to the ecological emergency by implementing the Nature Recovery Network
- enabling communities to be resilient to future flood and coastal risks
- aligning planning of flooding and coastal change and sustainable water management
- supporting local risk management authority decisions to manage surface water flood risk
- Influencing development planning and national planning policy

Summary of significant environmental effects and mitigation actions and enhancement opportunities

The assessment undertaken for the draft plan for South West RBD has found that the identified environmental effects are likely to be predominantly positive or neutral. Table 1 sets out the conclusion of the assessment by environmental topic.

Table 1: Summary of environmental effect by environmental topic

| Topic | SEA Question | Conclusion of Assessment |
|---|---|--|
| Biodiversity, including flora and fauna | Does the plan protect and recover nature? | Positive – some negative effects at a national level balanced by place-based significantly positive effects |
| Population and human health | Does the plan improve health, wellbeing and equality? | Significantly positive – ongoing endeavours important to maintain assessment level |
| Soil | Does the plan improve and sustain resources? | Overall neutral – subject to a balance between measures that will have positive and negative effects at the river basin and place-based scales |
| Water | Does the plan protect and improve the water environment? | Overall positive – some short-term negative effects felt during construction |
| Climatic factors | Does the plan help to mitigate and adapt to climate change? | Neutral – both positive and neutral effects at the local scale |
| Material assets | Does the plan support communities and a prosperous economy? | Positive effects – some place-based negative effects |
| Cultural heritage | Does the plan conserve and enhance the historic environment? | Neutral – negative place-based effects dependant on outcomes of heritage baseline assessments |
| Landscape | Does the plan conserve and enhance landscape and seascape character? | Overall neutral – balance of positive and negative effects of local and river basin wide measures |
| Interrelationships | Does the plan have implications for the relationship between the environmental topics? | Yes – neutral effects expected across interrelationships |

Biodiversity, including flora and fauna

The assessment of the draft plan identified the draft plan measures are likely to have a positive effect on biodiversity in the RBD.

Protecting and Preventing type measures screened into the detailed assessment that result in positive effects on biodiversity include:

- soil condition improvements
- floodplain reconnection of designated waterbodies
- priority habitat creation and restoration, including intertidal, saltmarsh and peatland
- beach and dune management of designated sites

These measures align with and support national and local strategy and policy to recover nature and deliver biodiversity net gain over the life of the draft plan. They also contribute to climate adaptation, carbon sequestration and the conservation of land and seascapes synonymous to the South West RBD.

All measures with positive environmental effects will contribute towards nature recovery by enhancing the quality, extent, diversity or connectivity of habitats between designated spaces. Measures which identify the emerging Nature Recovery Network will form a foundation to creating corridors to species by joining fragmented habitats together.

Place-based significantly positive and negative effects on biodiversity will be felt where flood risk activities impact designated spaces of national and international importance. Ongoing management and monitoring of these activities will be increasingly important over the lifetime of the plan.

Preparing and other measures to investigate, assess and develop options for flood risk management will have neutral effects. Indirectly, evidence-based decisions will allow biodiversity specialists to influence how and where environmental enhancements will be implemented through capital delivery.

Population and human health

The assessment of the draft plan identified the measures are likely to have significantly positive effects on population and human health in the RBD.

Across South West RBD, measures which provide significant positive benefits and outcomes through the:

- identification of opportunities to increase flood warning systems to ensure resilience and aware communities at risk of flooding
- implementation of schemes to raise the standard of protecting to better protecting people and property
- increase the opportunities to engage with members of the public to raise awareness of flood risk and impacts of climate change
- influence the way in which land manager and utility companies manage flood risk or incidental flood risk
- identification of surface water run-off from agricultural land and improved attenuation and storage of water, helping to reduce flood risk to communities and infrastructure

- increase the conservation of habitats and species across the unique landscapes of the South West for the enjoyment of local residents and tourists
- agricultural economy in the long term because of improved land management practices which will help to reduce soil erosion and nutrient loss, and long-term in the availability of water for irrigation and livestock. This will also contribute to the delivery of the South West RBMP
- improve health and wellbeing because of enjoyment of the water environment could be realised through early involvement of recreational and leisure interest groups. Opportunities could include improved access to rivers, lakes and the coast, as well as ability to see and hear water
- betterment of water quality - people, health and the local economy through a better-quality water environment and improved recreation and leisure opportunities
- opportunities to reduce flood risk, driven by resilient communities, economic growth and regeneration

Emphasis is placed on significantly positive effects where communities are particularly vulnerable in age, connection to surrounding infrastructure like schools, essential shops and emergency services and where flooding effects people's ability to earn a living, like agriculture and transport.

Soil

The assessment of the draft plan identified the measures are likely to have mostly neutral effects on soil in the RBD based on a balance of positive localised effects and negative effects in connection to implementing river basin management objectives.

Measures that are likely to have a positive effect on soils across the South West RBD include specific reference to:

- soil condition improvements
- floodplain reconnection of designated waterbodies
- priority habitat creation and restoration, including intertidal, saltmarsh and peatland
- natural flood management (NFM)

Improvements to soil health will play an intrinsic role in bettering the water environment and long-term productivity of agricultural land. These interrelationship benefits are explored in the water, material assets and biodiversity chapters.

Water

The assessment of the draft plan identified that measures are likely to have an overall positive on sustainable management of water resources and water quality, and support the delivery of Water Framework Directive objectives across the South West RBD.

Many measures will have neutral effects on water as they do not involve physical activities on the ground. Investigations, modelling, mapping, engagement with communities and flood risk appraisals and assessments will have neutral effects on water quality, water as a resource and the water environment. It is likely these

measures will align with the actions in the second and future third cycle South West River Basin Management Plan.

In general protecting and preventing type measures that result in physical activities are likely to reduce surface water run-off in rural and urban areas, improve soil condition, and reduce the input of sediments, nutrients and other pollutants into watercourses. Multifunctional schemes will improve this approach by embracing working with natural processes (WWNP) solutions to reduce surface water run-off (such as sustainable drainage systems) and sustain or improve the connection of watercourses with their natural floodplain enabling water storage, infiltration and the natural deposition of sediments. Effects on water quality could be improved by delivering projects which reduce wetland habitat loss and include habitat creation.

Measures to deliver capital projects like new flood risk management schemes are likely to have negative effects on the water environment. During construction direct negative effects like source pollution are avoided using on site best practise. However the implementation of built defences may result in impeding the natural flow of water, reducing the capacity of the floodplain to naturally store water and is likely to hold sediment deposit in unfavourable areas. Continual assessment of these issues is integral to the design decision making process.

The assessment found that there are strong interrelationships between water and biodiversity and landscape. Biodiversity in the South West RBD is often reliant on the quality, extent, diversity or connectivity of water reliant habitats between designated and undesignated spaces. Unique land and seascapes of the RBD make up these designated and undesignated spaces and so there is a strong correlation between an improvement of water habitats and landscapes.

Climatic factors

On balance, the assessment of the proposed measures in the draft plan has identified that the draft plan is likely to have a positive to neutral effect on climatic factors.

Protecting measures are likely to involve physical 'on the ground' activities with the potential to have negative effects on supporting adaptation to climate change. If these protecting measures were to progress to implementation there is the potential for negative effects on climate change adaption caused by building new flood infrastructure or improvements to existing infrastructure. This is due to the embodied carbon with engineered solutions and emissions generated during construction activities. These local effects are currently uncertain. It is advised that potential effects on climatic factors be assessed at the project level through environmental assessments as the proposed measures to reduce flood risk develop.

The protecting measures screened into the detailed assessment for the SEA which comprise the delivery of NFM interventions, priority habitat creation or restoration and soil health improvement are likely to make a positive contribution to climate change mitigation.

Preventing and preparing measures which are likely to have a positive effect to climate change adaption include opportunities to improve community resilience to climate change and awareness of impacts of flooding.

Specific RBD-scale measures likely to have a significant positive effect by offering opportunities to manage climate mitigation and adaptation includes carbon reduction planning, adaptation pathway planning and place-based measures to implement national and local strategies to store or reduce carbon. Examples include:

- by 2027, the Environment Agency will ensure carbon created by managing all sources of flood risk is reduced, offset in line with local carbon reduction plans in Devon, Cornwall and the Isles of Scilly to work towards achieving net zero carbon by 2030 in the South West River Basin District
- by 2023, the Environment Agency will develop a carbon reduction plan in Wessex to identify opportunities and provide a framework to deliver projects that reduce carbon emissions within FCRM and contribute to the Environment Agency 2030 net zero carbon target, in the South West River Basin District
- between 2021 and 2027, the Environment Agency will work with partners to trial a Catchment Market approach in South West England to reduce nutrients to meet water quality and protected sites objectives, and to provide benefits to nature recovery, flood risk, carbon reduction and land management in the South West River Basin District
- between 2021 and 2027, the Environment Agency will identify opportunities through a review of Environment Agency maintained assets in South West England to promote environmental enhancements, reduce or store carbon, and reduce maintenance costs in the South West River Basin District

Material assets

Material assets include flood risk assets, services, agricultural land as well as infrastructure such as roads and public amenities and blue green infrastructure.

The assessment finds the measures in the South West RBD to have predominantly positive effects on material assets across the RBD.

Protecting and preventing measures across the RBD will protect and improve the resilience of communities to flood risk by improving flood assets and improving the flood risk to critical infrastructure such as roads, emergency services and utilities. Some measures also seek to identify adaptive pathways to ensure blue/green infrastructure is resilient to intensifying flood event and climate change.

Improved attenuation and storage of water, through the implementation of natural flood management solutions and improvements to soil condition will help reduce flood risk to buildings, transport networks and public amenity infrastructure.

Conversely in specific locations where measures result in removal of tidal and fluvial embankments and floodplain reconnection could negatively impact agricultural land by allowing for inundation from fluvial and coastal sources.

Cultural heritage

The majority of South West RBD measures will have neutral effects on cultural heritage and archaeology as they do not involve physical activities on the ground. It is implied the general principle of flood prevention seeks to protect and conserve historic buildings from flood damage.

Protecting measures which result in the implementation of physical works on the ground will have negative effects on the cultural heritage. Negative effects can arise

from impacts on the setting and character of historic places, or through ground disturbance with potential implications on unrecorded archaeological remains. These effects will be dependent on the historical sensitivity of locations. It is advised that potential effects on the historic environment be assessed at the project level through cultural heritage assessments. A heritage baseline should be established to understand the historic significance of areas to be impacted and to inform mitigation requirements.

Preventing and preparing measures supporting greater awareness, engagement and collaborative working are considered likely to have a long-term positive effect. By increasing awareness of the risk and impacts of flooding and coastal change to cultural heritage, it is envisaged this will inspire owners and occupiers of historic properties and landscape to act to protect and increase resilience.

Landscape

South West RBD specific measures that result in physical works on the ground are predominantly protecting and preventing type measures. They will have positive and negative effects on the distinctiveness and character of the varied land and seascapes in the South West RBD, ultimately resulting in neutral effects.

The assessment identified the protecting and preparing measures involving natural flood management, priority habitat restoration, beach and dune management and soil condition improvements will have positive effects on landscape character and distinctiveness.

There is an instance in the Plymouth FRA that explores partnership working to directly influence the effects of flood risk on landscape character:

- by 2024, Plymouth City Council and the Environment Agency will work in partnership to implement the Green Minds Policy and assess opportunities to align surface water storage and green landscapes in Plymouth to provide both flood risk management, ecological and user benefits in the Plymouth, South West Flood Risk Area

Landscape change resulting from the creation or adaption of existing infrastructure and flood risk assets can result in a loss of landscape features that contribute to the character of a place, and its use by people. It is expected that in these instances, mitigation and management can be used to reduce the risk of effect on landscape character and use by people.

The significant environmental effects of national measures

On balance the national measures in the plan are assessed as having significant positive effects on population and human health, with effects on biodiversity assessed as potentially negative and all other environmental issues assessed as neutral.

The assessment recognises the potential for individual national measures to have positive or negative environmental effects as described in the sections above. The actual environmental effects will depend on the nature and extent of the actions that arise from the national measures and local environmental conditions.

Given the widely acknowledged global climate and nature emergencies, environmental issues are increasingly important in a strategic context. It is therefore

important that national measures are actively implemented in a way that gives due consideration to their environmental consequences. The Environment Agency's well-established approach to assessing and managing environmental risk and opportunity at a programme and project level will play an important role in minimising negative effects and maximising positive effects from these actions as they are implemented. It is anticipated that lead local flood authorities (LLFAs) will have similar controls in place.

The balance of negative and positive effects associated with national measures is likely to skew more strongly towards positive over the duration of the plan as the Environment Agency and LLFAs make progress towards net zero carbon and environmental net gain targets and as nature first ways of working are embedded in standard practices.

The significant environmental effects of collections of measures in key locations

Delivery of nature-based solutions in rural and urban catchments has considerable potential to deliver significant positive effects on the environment, for example by delivering nature recovery actions, enhancing landscape character and improving water quality and biodiversity, thereby also significantly benefitting population and human health. The measures also have the potential for significant positive effects on population and human health due to reduction of flood risk to property and infrastructure like road networks and essential services. There is also the potential to improve the health and wellbeing of communities from local biodiversity enhancements and access to improved landscapes and water environments.

The delivery of natural flood management interventions in the rural and urban catchments can also deliver positive impacts on soil, water and landscape. Soil health improvements and the reduction of sediment run-off from farmland will have positive effects on material assets by protecting and conserving agricultural land, and on the water environment by supporting delivery of WFD objectives.

The investigation of options requires a heritage baseline to understand the historic significance of areas to be impacted. Landscape or visual effects should also be considered during the investigation of options, as well as opportunities to enhance recreation, amenity and public realm. These measures will also need to consider the nature conservation designations, heritage structures and potential buried archaeology.

The delivery of flood defences and maintenance of existing flood defence structures in urban settings are likely to deliver positive impacts on material assets, and most importantly population and human health.

Investment in flood warning systems and upgrades of telemetry and gauging, particularly within FRAs, will have a significant effect on mental health and wellbeing of local communities most at risk of flooding.

Activities to raise public awareness will also contribute positive effects on population and human health, aligning with the long-term ambitions of the National FCRM Strategy to create a nation ready to respond and adapt to flooding and coastal change.

The significant environmental effects of different types of measures

Protecting measures in the draft plan consist the largest category of works across the South West RBD. The measures have a range of effects on the environmental topics, dependant on scale and location of physical interventions which will have both positive and negative effects across the environmental topics.

Preventing measures in the South West RBD draft plan that have the potential to affect the environmental topics during the lifetime of the plan include:

- measures to remove or relocate receptors to lower flood risk areas
- measures to adapt receptors such as buildings and infrastructure to reduce the consequence of flooding

These measures involve physical works on the ground and contributes to the ongoing management of flood risk from rivers and sea in Flood Risk Areas and the SLM strategic area. The environmental effects of these measures are widespread and depend on the scale and location of the intervention. It is likely they will have positive and negative effects on biodiversity, population, water, cultural heritage and landscape at the local level. Detailed assessment of the individual measures with these subtypes of work concludes that mitigation and management will influence the final local effect of the measure. It is unlikely these measures will have an RBD scale effects individually.

There is an even spread of preparing measures across the different measure scales, including those based at FRA, management catchment and RBD level. The type of work across the scales mainly focuses on flood warning and forecasting, and public awareness measures. They have a significantly positive impact on population and human and neutral effects for the remaining environmental topics.

Other measures at the RBD level will have significantly positive impacts on raising the awareness and implementation of nature-based solutions to flood events, allowing for the sharing of information and experiences across the country. National measures align closely with measures categorised under 'other'.

The majority of protecting type measures in the draft plan were screened out of the detailed assessment for the SEA as there is insufficient information on the location, scale and design of the measures, or they are measures brought forward from the previous cycle FRMP. As a result potential environmental effects will depend on the environmental sensitivities of the local area likely to be affected. For the topic of cultural heritage, the assessment identified that protecting measures will require a heritage baseline to be established to understand the historic significance of areas to be impacted.

The significant environmental effects of the draft plan overall

The assessment undertaken for the draft plan for South West RBD has found that the identified environmental effects are likely to be predominantly positive or neutral.

The assessment has identified significant positive effects in relation to population and human health. This reflects the inherent nature of the flood risk management for the benefit of people and property. Measures of this nature supports national FCRM strategy to adapt communities to climate change as well as local government strategies to ensure economic growth and sustainable communities.

Increasingly measures in the FRMP also demonstrate commitment to improving the natural environment for the benefit of flood risk management and consequently biodiversity, water, landscape and soil receptors. This supports national and local plans, policies and strategies to recover nature and mitigate for climate change.

Mitigation actions and enhancement opportunities

The assessment process for the SEA of the draft plan has identified mitigation actions and enhancement opportunities relevant to each environmental topic. These identified opportunities to enhance the positive and mitigate any negative environmental effects are described in sections 5.1 to 5.8 by each environmental topic.

The mitigation actions include further studies and environmental assessments that should be undertaken at subsequent stages, such as at the project level and during scheme design.

As measures progress through to delivery, it is recommended that the following mitigation actions be incorporated and applied to the project planning, design and construction stages, as relevant:

- adoption of the mitigation hierarchy principle as a design principle during development of protecting measures, with avoidance of areas of environmental sensitivity as far as possible
- investigation of flood risk management schemes to undertake environmental impact assessments at the project level, where required, for potential significant effects and to identify scheme specific mitigation
- a heritage baseline should be prepared for protecting measures involving physical 'on the ground' activities to inform the historic significance of areas to be impacted
- assessment of potential effects on landscape character and visual amenity should be undertaken as part of the project level environmental assessment and inform mitigation requirements. Townscape character assessment should also be considered when developing proposals in urban areas
- a Water Framework Directive (WFD) assessment should be undertaken for Protecting measures, where required, to demonstrate compliance with the WFD objectives at a water body scale
- RMAs and partners to support the delivery of environmental net gain in local places for new flood risk management measures
- RMAs to identify a target to achieve biodiversity net gain (BNG) for measures involving loss of habitat. There will be a requirement for all schemes through development, meeting the mandatory 10% gain under the NPPF (following assent of the Environment Bill)
- RMAs to demonstrate consideration of sustainable solutions during investigation of flood risk management measures at the project level (including use of the carbon reduction hierarchy to drive carbon reduction)

Cumulative effects of the interactions between the draft plan and other relevant policies, plans and programmes

An assessment of the key potential cumulative effects of the interactions between the draft plan and other relevant policies, plans and programmes has been undertaken for the SEA. This assessment included consideration of potential interactions with other major proposals and strategies relevant at the RBD scale.

Policies, plans and programmes identified include:

- River Basin Management Plan for the South West RBD cycle 2
- South Devon and Dorset SMP
- Cornwall and Isles of Scilly SMP
- North Devon and Somerset SMP
- South West Water Resource Management Plan 2019
- Local Flood Risk management plans (various by local authorities)
- Local authority driven responses to Biodiversity Action Plans like the Dorset Biodiversity Strategy and Cornwall 'Planning for Biodiversity' Guide 2018

The cumulative assessment concluded that the interaction between PPPs and the draft plan will be predominantly positive for biodiversity, population, landscape and water. There will be positive to significantly positive effects on climate adaptation.

Several measures in the draft plan will facilitate a collaborative approach in the development of:

- an adaptive pathway plan in the RBD to deliver solutions for climate resilience. It is envisaged that this strategic planning and partnership working approach would mitigate any significant cumulative effects from the protecting measures or actions taken forward across the RBD
- hold the line and management realignment by assessing the risks associated with coastal processes and helps reduce these risks to people and the developed, historic and natural environments
- creating and restoring priority water-based habitats which will slow the flow and storage water in upper catchments and create space for intertidal habitats along the coast

Proposed monitoring

A detailed summary of proposed monitoring and the sources of monitoring information is found in section 7 of the environmental report.

The proposed monitoring indicators are biodiversity, population and human health, climatic factors and material assets. Recommendations are linked to existing monitoring programmes and arrangements, where possible, to be practical and cost-effective.

Significant effects of the plan will be monitored by evidence of activity by the Environment Agency through its commitment to the second cycle FRMP measures. The second cycle FRMP includes measures which reference to specific monitoring activities. Monitoring activities contribute to the overall effectiveness of the measures, with particular focus on how flood risk is impacted by climate change.

Examples include:

- measuring the effectiveness of flood warning systems across the RBD to meet future operational, warning and forecasting requirements
- the ongoing South West Regional Coastal Monitoring Programme (CMP) and Dorset Coastal Engineering Partnership CMP to deliver beach erosion monitoring, post storm damage surveys and hydrodynamic monitoring in South West England to ensure a consistent approach to long term coastal process monitoring
- evidence to support the development of shoreline management plans, coastal defence strategies and the operational management of coastal erosion and flood defence in the South West RBD
- the ongoing South West Regional CMP and Dorset Coastal Engineering Partnership CMP to deliver topographic monitoring and habitat mapping in South West England to provide evidence for biodiversity net gain decision making, promote nature-based solutions and coastal management decisions
- manage impacts of existing beaver populations where there are impacts to flood risk management activities in South West England to manage and mitigate the interaction of beavers with flood risk maintenance activities and infrastructure
- implement a system for monitoring, recording and sharing information on flooding in various FRAs and Management Catchments across the South West RBD
- the proposals for monitoring will be finalised in conjunction with the preparation of the final second cycle FRMP. Where a measure identified capital project or programme delivery, the effects of the measure will be monitored according to the environmental action or monitoring plans agreed at delivery

Next steps

The draft second cycle FRMP sets out how we'll continue to develop and finalise the plan while considering responses to this consultation. As the plan evolves, we'll consider any implications this might have for effects on the environment as part of our SEA requirements.

A statement of environmental particulars will be published alongside the final plan. This will be accompanied by a statement of environmental particulars.

The statement of environmental particulars will provide:

- a summary of how environmental considerations have been integrated into the final FRMP
- a summary of how consultation responses to the draft FRMP and environmental report have been considered
- a summary of how the final plan has changed since the draft FRMP
- what the above means in terms of changes to the environmental effects that were reported in the environmental report
- the reasons for choosing the final FRMP as adopted whilst considering reasonable alternatives
- the measures to be adopted to monitor the environmental effects of the FRMP

This consultation

Who we are consulting

We've prepared this environmental report to consult with interested parties, in particular the statutory SEA consultation bodies, on the results of the SEA process. In England the SEA consultation bodies are: Natural England, Historic England and the Environment Agency. We're also consulting with the Marine Management Organisation.

How we are communicating our results

We've published this non-technical summary alongside an environmental report and the draft second cycle FRMP for consultation.

The environmental report sets out the results of the SEA. It:

- provides information on the current condition of the environmental topics that the draft second cycle FRMP could affect
- outlines how the plans and programmes we've reviewed could affect the draft second cycle FRMP
- provides a commentary on how we've integrated the SEA with the development of the draft second cycle FRMP and how it's influenced it
- sets out the strategic options that we've evaluated and the reasons for the selection of the proposed approach
- sets out the environmental effects of the draft second cycle FRMP
- suggests additional mitigation or management actions to improve the environmental outcomes further
- provides a description of the monitoring proposed to identify any unforeseen adverse effects

This environmental report will be available for comment with the draft second cycle FRMP.

This non-technical summary provides an accessible summary of the information included within the environmental report.

We'll use any comments and information we've received to update the draft second cycle FRMP and reconsider our assessment of the environmental effects.

Once the plan's adopted, we'll publish a post-adoption statement (an advertisement), stating where the public can view the adopted plan and its environmental report. We'll also document an explanation of how the environment has been considered throughout the plan-making process in a statement of environmental particulars.

This will include:

- how environmental considerations have been integrated into the plan
- how the environmental report and consultation responses have been considered
- the reasons for choosing the plan as adopted considering other reasonable alternatives from the SEA
- the measures to be taken to monitor the significant environmental effects of implementing the plan

How to respond

To help with this consultation, we welcome your views on the following questions:

Question 1: Do you agree with the conclusions of the environmental assessment?
(yes / no)

If not, please explain why.

Question 2: Are there any further significant environmental effects (positive or negative) of the draft second cycle FRMP, which you think should be considered?
(yes / no)

If yes, please describe them.

Question 3: Are there further mitigations for potential negative effects or opportunities to achieve positive effects that should be considered for the final second cycle FRMP? (yes / no)

If yes, please give details.

The consultation on this environmental report is open for 12 weeks, from 22 October 2021 to 21 January 2022. You can view the consultation documents and questions online on the consultation pages.

Please submit your response online. This will help us gather and summarise responses quickly, accurately and cost-effectively.

However, if you prefer, you can submit your response by email or post using our response form. Please submit by email to: enquiries@environment-agency.gov.uk.

Or by post to:

Environment Agency

Draft second cycle flood risk management plans consultation

National Customer Contact Centre

PO Box 544

Rotherham

S60 1BY

You can also request a printed version of the document and a response form using these contact details or by phone to 03708 506 506.