

# National Flood and Coastal Erosion Risk Management Strategy for England

## Annex C

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## Benefits, costs and funding

The Flood and Water Management Act 2010 places a requirement on the Environment Agency to develop a Strategy for flooding and coastal change. All risk management authorities must exercise their flood and coastal erosion risk management activities, plans and strategies in accordance with the Strategy. It is for this reason that the Environment Agency has worked collaboratively with over 90 practitioners representing a wide range of organisations to develop this Strategy. A draft Strategy was also consulted on in May 2019 receiving significant media coverage and received over 400 responses which has informed the Strategy's final objectives and measures.

The Environment Agency established an advisory group to test the Strategy's objectives and measures which included representatives from risk management authorities, including local government and internal drainage board associations, as well as other national and civil society organisations.

The focus of the Strategy is on the transformative actions we should take as a nation, now and over the next 10 to 30 years to support the vision and ambitions up to 2100.

The Strategy recognises that there are strong economic, social and environmental benefits from investing in resilience and adapting to the impacts of future flooding and coastal change. The Environment Agency's long-term investment scenarios 2019 study finds that the annual average investment need in flood and coastal change infrastructure is £1 billion per year, with an anticipated net present value of £100 billion over the next 100 years. The average benefit cost ratio is 5:1. The measures in this Strategy are intended to make future investment more effective, efficient and co-ordinated. They will help us to realise the benefits set out in long-term investment scenarios.

The Environment Agency has undertaken a costs impact assessment of the measures included in this Strategy. The Strategy's measures are either a reaffirming of existing activities, recognition of existing and new statutory requirements or voluntary funded actions (See Annex 1 for the roles and responsibilities of these organisations). All measures are therefore cost neutral, in that they do not lead to cost increases for risk management authorities.

In the March 2020 Budget, the government announced a new £5.2 billion programme of funding for flood risk and coastal erosion projects from 2021 to 2027. This new funding will support the delivery of the Strategy's shorter term measures by risk management

authorities. There are some Strategy measures which involve improving evidence or testing and developing new approaches which were also provided with additional funding in the government's 2020 Budget. This includes improving the National Coastal Erosion Maps to strengthen the evidence base for coastal adaptation investments and decisions. The March 2020 Budget also included a £200 million Resilience fund which will be used to test, develop and implement resilience actions in different places around the country.

The Strategy recognises that funding for future investment cannot all come from the public purse and that as a nation we will need to make greater use of funding and financing from other sources. This is likely to include innovative and green financing sources (see strategic objective B).

The Environment Agency will develop arrangements for monitoring and reporting of the Strategy's progress with government and risk management authorities. The Environment Agency will develop a voluntary action plan for taking the Strategy forward with partners which will be published by April 2021.

## Details of measures

### Future risk and investment measures

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**Strategic objective A:** Between now and 2025 the Environment Agency will have better evidence to inform future risk and investment needs for managing all sources of flood and coastal change.

**Measure A.1:** By 2023 the Environment Agency will work with coast protection authorities to improve the National Coastal Erosion Maps to strengthen the evidence base for coastal adaptation investments and decisions.

Funded by 2020 Budget

**Measure A.2:** By 2024 the Environment Agency will produce a new national assessment of flood risk that will help places better plan and adapt to future risks from flooding from rivers, the sea and surface water.

Existing Environment Agency activity – strategic overview role

**Measure A.3:** By 2025 the Environment Agency will produce a new set of long-term investment scenarios to inform future policy and investment choices for achieving flood and coastal resilience.

Funded by 2020 Budget, existing Environment Agency activity – strategic overview role

**Strategic objective B:** Between now and 2030 risk management authorities will make greater use of funding and financing from non-public sector sources to contribute to the investment needs of flood and coastal resilience.

**Measure B.1:** From 2021 the Environment Agency will work with other risk management authorities and private sector partners to trial new and innovative financing to improve flood and coastal resilience.

Existing Environment Agency role/activity

**Measure B.2:** By 2025 risk management authorities will encourage the development of the skills and capabilities they need to help secure new and innovative funding and financing for flood and coastal resilience.

Existing role/activity/risk management authority discretion

## Climate resilient places measures

**Strategic objective 1.1:** Between now and 2050 the nation will bolster its resilience to flooding and coastal change.

**Measure 1.1.1:** By 2021 the Environment Agency will enhance the appraisal guidance for flooding and coastal change projects, so that investment decisions can better reflect a wider range of resilience actions and climate change scenarios.

Environment Agency existing role/activity

**Measure 1.1.2:** From 2020 the Environment Agency will work with the government to lead the delivery of the resilience programme supporting 25 local places to take forward innovative actions that help to bolster resilience to flooding and coastal change.

Funded by 2020 Budget

**Measure 1.1.3:** By 2025 the Environment Agency will work with government to use the evaluation and learning from the resilience programme to better understand the benefits and costs of different resilience actions.

Funded by 2020 Budget

**Strategic objective 1.2:** Between now and 2050 risk management authorities will help places plan and adapt to flooding and coastal change for a range of climate scenarios.

**Measure 1.2.1:** From 2020 the Environment Agency will update the technical guidance for shoreline management plans to support coastal groups to generate the best evidence, actions and policies to plan and adapt for coastal change.

Existing Environment Agency role/activity

**Measure 1.2.2:** From 2020 the Environment Agency will work with other risk management authorities and local partners to develop adaptive pathways that enable local places to better plan for future flood and coastal change and adapt to future climate hazards.

Funded by 2020 Budget

**Measure 1.2.3:** By 2025 the Environment Agency will use the learning from adaptive pathways develop a package of guidance, resources and tools to better integrate adaptation to future flooding and coastal change into projects, investments and strategic plans.

Funded by 2020 Budget

**Measure 1.2.4:** By 2025 coastal groups will review their shoreline management plans, update action plans and where appropriate change shoreline management policies to better reflect adaptive approaches to managing coastal change.

Funded by 2020 Budget

**Strategic objective 1.3:** Between now and 2050 risk management authorities will help coastal communities transition and adapt to a changing climate.

**Measure 1.3.1:** From 2020 risk management authorities will support coastal communities to transition and adapt to a changing climate, where the scale and pace of future flood and coastal change is very significant.

Existing role particularly for coastal authorities

**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.

**Measure 1.4.1:** From 2020 risk management authorities and Natural England will jointly develop new approaches for the conservation of protected sites, species and natural landscapes that enable adaptation to sea level rise and a changing climate.

Existing role/statutory activity, agreed with Natural England

**Measure 1.4.2:** From 2021 risk management authorities will work with catchment partnerships, coastal groups, land managers and communities to mainstream the use of nature based solutions.

Existing role/activity

**Measure 1.4.3:** From 2021 risk management authorities will contribute to improving the natural, built and historic environment by investing in projects that manage flood and coastal risks where this is appropriate.

Existing role/statutory activity

**Measure 1.4.4:** From 2021 investments in flood and coastal projects by risk management authorities will help to achieve objectives in river basin management plans and contribute to the government's aim for 75% of waters to be close to their natural state as soon as practicable.

Existing role/statutory activity, 25 Year Environment Plan commitment

**Measure 1.4.5:** From 2021 risk management authorities will work with Natural England and other partners as they develop Local Nature Recovery Strategies that enable new and restored habitats to contribute to flood and coastal resilience.

25 Year Environment Plan/Environment Bill commitment

**Strategic objective 1.5:** By 2030 risk management authorities will work with farmers and landowners to help them adapt their businesses and practices to be resilient to flooding and coastal change.

**Measure 1.5.1:** From 2020 risk management authorities and Natural England will work with farmers and land managers to encourage land use and land management practices that help contribute to greater resilience to both floods and droughts.

Existing role/activity, agreed with Natural England

**Measure 1.5.2:** From 2020 the Environment Agency will continue to work with the government and other partners to develop the Environmental Land Management scheme and pilot ways of reducing flood and coastal risks.

Existing role/Environmental Land Management Scheme/Agriculture Bill

**Measure 1.5.3:** From 2024 risk management authorities will work with farmers and land managers to maximise opportunities for the Environmental Land Management scheme to help reduce flood and coastal risks as a public benefit.

Environmental Land Management Scheme

**Measure 1.5.4:** By 2025 the Environment Agency will work with farmers, land managers, water companies, internal drainage boards and other partners to develop a long-term plan for managing future flood risk in the Fens.

Funded by 2020 Budget

## Today's growth and infrastructure – resilient to tomorrow's climate

**Strategic objective 2.1:** Between now and 2030 all new development will contribute to making places resilient to flooding and coastal change.

**Measure 2.1.1:** By 2020 the Environment Agency will update its guidance to planners and developers on flood risk assessments to account for the 2018 UK Climate Projections.

Existing Environment Agency role/activity

**Measure 2.1.2:** From 2020 the Environment Agency will continue to provide quality and timely planning advice to help avoid inappropriate development in areas at risk of flooding and coastal change.

Existing Environment Agency statutory planning advisory role

**Measure 2.1.3:** From 2020 the Environment Agency and coast protection authorities will advise planning authorities on how shoreline management plans can better inform planning policies for the coast, including designation of coastal change management areas.

Existing role/activity

**Measure 2.1.4:** From 2021 risk management authorities will support the development of the planning skills and capabilities they need to ensure new development and spatial plans are resilient to flooding and coastal change.

Existing role/activity/risk management authority discretion

**Measure 2.1.5:** By 2025 risk management authorities will provide advice to planning authorities on how to integrate long-term adaptive approaches into their spatial plans and growth strategies.

Funded by 2020 Budget

**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.

**Measure 2.2.1:** From 2021 risk management authorities will plan all flood and coastal defence projects and programmes to deliver biodiversity gain, in line with the government's mandate, and seek to encourage other environmental benefits.

Existing role/government policy/Environment Bill

**Measure 2.2.2:** From 2021 risk management authorities will work with developers and planners to maximise the opportunities for flood and coastal resilience as part of contributing to environmental net gain for development proposals.

Existing role/25 Year Environment Plan

**Strategic objective 2.3:** Between now and 2030 risk management authorities will support investments to manage flooding and coastal change that enables growth in a sustainable and climate resilient way.

**Measure 2.3.1:** From 2021 risk management authorities will identify how investments in flooding and coastal resilience can minimise the local economic impacts of flooding and coastal change, improve investor confidence and enable sustainable growth.

Existing role/local economic growth plans of local authorities

**Strategic objective 2.4:** Between now and 2040 risk management authorities will work with the finance sector and other partners to mainstream property flood resilience measures and to ‘build back better’ after flooding.

**Measure 2.4.1:** From 2021 risk management authorities will work with the finance sector, Flood Re and the property flood resilience industry to increase the uptake of property flood resilience measures in communities at highest risk.

Existing role, funded by 2020 Budget – property flood resilience option funded in capital programme from 2021

**Measure 2.4.2:** By 2025 the Environment Agency will work with government and other partners to tackle the policy, financial and behavioural barriers to mainstreaming property flood resilience measures and ‘building back better’ after flooding.

Existing role/activity of Environment Agency

**Strategic objective 2.5:** Between now and 2030 owners of flood and coastal defences will understand and take responsibility for achieving flood and coastal resilience.

**Measure 2.5.1:** By 2021 the Environment Agency will work with government, lead local flood authorities and other expert bodies to develop guidance setting out the best practice for local flood defence management and record keeping (as per the Surface Water Management Action Plan, 2018).

Existing activity/Surface Water Management Action Plan requirement



**Measure 2.5.2:** By 2021 the Environment Agency will raise awareness and communicate the responsibilities of flood and coastal defence owners, best practice actions as well as the action relevant risk management authorities will take to ensure responsibilities are being met.

Existing Environment Agency activity – strategic overview role

**Measure 2.5.3:** By 2024 the Environment Agency will work with government and risk management authorities to develop guidance setting out a common approach for inspecting and managing all flood and coastal defences to improve resilience, information sharing and collaboration.

Existing Environment Agency activity – strategic overview role

**Strategic objective 2.6:** Between now and 2030, owners and operators of large raised reservoirs will ensure they are safe in a changing climate.

**Measure 2.6.1:** From 2020, the Environment Agency will implement the recommendations of the government’s independent review into the Toddbrook Dam failure applicable to its role as the regulator of reservoir safety.

Existing Environment Agency regulatory role

**Measure 2.6.2:** By 2025, the Environment Agency will review the latest climate science to update guidelines for reservoir owners and operators of high risk reservoirs, to ensure they continue to be resilient to extreme flood events and climate change.

Existing Environment Agency regulatory role

**Strategic objective 2.7:** By 2030 water companies will plan for their infrastructure to be resilient to flooding and coastal change.

**Measure 2.7.1:** From 2020 water companies and other risk management authorities will work together to inform drainage and sewerage management plans to improve resilience to surface water and drainage flood risks.

Existing role, drainage and sewerage management plans in Environment Bill

**Measure 2.7.2:** From 2020 the Environment Agency and Ofwat will develop a joint approach for how water companies should consider flood and coastal resilience in the context of their statutory roles and duties.

Existing regulatory role of Environment Agency and Ofwat

**Measure 2.7.3:** By 2025 water companies and other risk management authorities will ensure that long-term adaptive planning for flooding and coastal change is better coordinated with the next and subsequent cycles of planning for water and wastewater investments.  
Existing role/water company planning role

**Strategic objective 2.8:** Between now and 2050 risk management authorities will work with national infrastructure providers to contribute to more flood and coastal resilient places.

**Measure 2.8.1:** From 2021 the Environment Agency will provide expert advice, evidence and data on flooding and coastal change to help national infrastructure providers ensure their investments are resilient to flooding and coastal erosion.

Existing Environment Agency activity – strategic overview role

**Measure 2.8.2:** From 2021 the Environment Agency will work with national infrastructure providers to better share information about long-term investment planning to identify win-win opportunities for improving flooding and coastal resilience in places.

Existing Environment Agency activity – strategic overview role

## A nation ready to respond and adapt to flooding and coastal change

**Strategic objective 3.1:** Between now and 2050 people will understand the potential impact of flooding and coastal change on their lives and livelihoods and will take action to reduce that impact.

**Measure 3.1.1:** From 2020 the Environment Agency will continue to invest in developing and transforming customer-driven digital services to better communicate risk from flooding and coastal change.

Existing Environment Agency role/activity

**Measure 3.1.2:** From 2021 risk management authorities will encourage the development of the engagement skills and capabilities they need to better support communities to manage and adapt to future flooding and coastal change.

Existing Environment Agency role/risk management authority discretion

**Measure 3.1.3:** By 2021 the Environment Agency will share learning and best practice with other risk management authorities on working with communities to manage and adapt to future flooding and coastal change.

Existing Environment Agency/activity

**Strategic objective 3.2:** Between now and 2030 people will receive the information and support they need to transform how the nation better prepares and responds to flooding and coastal change.

**Measure 3.2.1:** From 2020 the Environment Agency will continue to work with local resilience forums to develop flood plans that better coordinate preparing and responding to incidents.

Existing emergency response roles/ activity of local resilience fora

**Measure 3.2.2:** By 2022 the Environment Agency will have expanded its flood warning service to all places at a high risk of flooding and coastal change from rivers and the sea.

Existing activity/Autumn Statement 2018 funded project on expanding flood warnings coverage

**Measure 3.2.3.** By 2025 the Environment Agency will work with partners to transform its warning and informing services to better reach people living, working or travelling through flood risk areas.

Existing Environment Agency role/activity

**Measure 3.2.4:** By 2025 risk management authorities will support people living in places at high risk of flooding and coastal change to setup flood groups, where they are wanted, and to develop and test local flood plans.

Existing role/activity – locally driven

**Strategic objective 3.3:** Between now and 2030 people and businesses will receive the support they need from all those involved in recovery after flooding so they can get back to normal quicker after flooding.

**Measure 3.3.1:** From 2020 risk management authorities, local responders, the insurance sector and other partners will continue to work together to help people and businesses recover more quickly after flooding.

Existing role/activities of risk management authorities and emergency responders

**Measure 3.3.2:** By 2025 the Environment Agency will work with government, other risk management authorities and public health services to ensure that the mental health impacts from flooding is factored into long-term recovery planning.

Existing Environment Agency role/activity.

**Measure 3.3.3:** By 2025 the Environment Agency will have worked with risk management authorities and local responders to develop a plan for better involving the third sector in supporting significant flood incidents.

Existing role/activities of risk management authorities and emergency responders

**Strategic objective 3.4:** By 2030 the Environment Agency will have an oversight of skills and capabilities across the flooding and coastal change sector to identify gaps and future needs.

**Measure 3.4.1:** By 2025 risk management authorities and other organisations will work with education providers to encourage opportunities for ongoing learning and career development in engineering and environmental sciences.

Existing activity/risk management authority discretion if involved

**Strategic objective 3.5:** Between now and 2030 the nation will be recognised as world leader in researching and managing flooding and coastal change.

**Measure 3.5.1:** From 2020 the Environment Agency will continue to work with research councils and academic institutions on world leading research that promotes innovation and informs future approaches to flooding and coastal change.

Existing Environment Agency role, existing Defra/Environment Agency flood research programme

**Measure 3.5.2:** By 2025 the Environment Agency will share learning and best practice from around the world with other risk management authorities to encourage innovation in how we manage flooding and coastal change.

Existing Environment Agency role/activity

**Measure 3.5.3:** By 2030 the Environment Agency will work with its supply chain to develop world leading ways of reducing the carbon and environmental impact from the construction and operation of flood and coastal defences.

Existing role/activity with Environment Agency's supply chain