Managing flood and coastal erosion risks in England:

1 April 2011 to 31 March 2012

Report by the Environment Agency

We are the Environment Agency. We protect and improve the environment and make it a better place for people and wildlife.

We operate at the place where environmental change has its greatest impact on people's lives. We reduce the risks to people and properties from flooding; make sure there is enough water for people and wildlife; protect and improve air, land and water quality and apply the environmental standards within which industry can operate.

Acting to reduce climate change and helping people and wildlife adapt to its consequences are at the heart of all that we do.

We cannot do this alone. We work closely with a wide range of partners including government, business, local authorities, other agencies, civil society groups and the communities we serve.

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Foreword

This first statutory annual report on flood and coastal erosion risk management for England provides an update of what has been achieved during the year 1 April 2011 to 31 March 2012.

The report highlights the achievements of all risk management authorities working in partnership to manage the risks to people and properties including

- flood and coastal erosion risk management schemes that have reduced the risk to households and businesses
- advice provided on the risk from flooding and coastal erosion when others are making decisions about where to build new homes
- improvements and developments in innovative flood forecasting and warning approaches

It also reports on the environmental benefits achieved from actively considering opportunities to enhance the natural environment in flood and coastal erosion risk management schemes.

In 2011/12, new polices and legislation have been introduced and implemented providing a clearer and more effective framework for the management of flood and coastal erosion risks. The report highlights these key developments including the approval by Parliament and the publication of the first national strategy for flood and coastal erosion risk management. This sets out a new framework and encourages all risk management authorities to work in partnership to achieve benefits for people and the environment.

The progress made during 2011/12 will need to be built upon in the coming years. I want to see the early benefits of the new Partnership Funding approach extended by bringing in more money, providing local choice and hence benefiting more people.

This report has been produced during the summer and autumn 2012 floods when those working in flood and coastal erosion risk management have focused their efforts on providing warning services, carrying out maintenance activities in preparation for events, operating assets, helping communities cope and repairing assets as required after the event. These floods have been recognised in this report and will be reviewed in more detail in the next annual report.

Dr Paul Leinster CBE

Chief Executive

Executive summary

The numerous flood events in the autumn of 2011 and summer 2012 have reminded us flooding is a serious ongoing risk for very many communities. The flooding during the summer of 2007 caused substantial damage and impacted on the lives of thousands of people. The Flood and Water Management Act 2010 implemented many of the recommendations from Sir Michael Pitts's review into these floods. The Act clarifies the roles and responsibilities for the management of flooding and introduces some new duties.

This report fulfils one of these new duties placed on the Environment Agency. It summarises the progress made by all risk management authorities in England on managing flood risk and coastal erosion during the year 1 April 2011 to 31 March 2012. Notable achievements during this year include:

- reducing flood risk to 44,030 households and reducing the risk of loss from coastal erosion for 769 households
- one thousand properties benefiting from schemes addressing known surface water and groundwater flooding issues
- improving forecasting and warning services for flooding including the new Shoothill Facebook Application which improves the access to flood warning information
- the publication of the first National Flood and Coastal Erosion Risk Management Strategy and the introduction of Partnership Funding - a new partnership approach to funding which will increase capital investment in flood and coastal risk management activities sharing the costs with those that will benefit from new schemes
- the completion of 152 Preliminary Flood Risk Assessments by all the lead local flood authorities (LLFAs) as required under the Flood Risk Regulations which implement the EU Floods Directive
- 149 LLFAs are making progress on their local strategies as required under the Flood and Water Management Act 2010

This report has been developed with information from a range of sources. Direct contributors include:

- all 152 lead local flood authorities in England and the Local Government Association
- the Association of Drainage Authorities
- the National Flood Forum
- the ten water and sewerage companies operating in England - Anglian Water, Northumbrian Water, Severn Trent, South West Water, Southern Water, Thames Water, United Utilities, Dŵr Cymru Welsh Water, Wessex Water and Yorkshire Water
- the twelve Regional Flood and Coastal Committees in England
- the Department for Environment, Food and Rural Affairs (Defra)
- the Environment Agency (collating information on its activities and those of other risk management authorities including local authorities, coastal groups and internal drainage boards (IDBs))

Contents

1 Introduction

The effective management of flood and coastal erosion risks requires many organisations to work together in partnership. These include the following risk management authorities:

- The Environment Agency
- Lead local flood authorities (LLFAs)
- District authorities
- Internal drainage boards (IDBs)
- Water companies
- Highway authorities

The Environment Agency has a duty to report to the Minister on progress in England under the Flood and Water Management Act 2010 (the Act). This progress report describes how all risk management authorities and other organisations working in flood and coastal erosion risk management are working together to deliver the National Flood and Coastal Erosion Risk Management (FCERM) Strategy and it will help inform government's future policy decisions.

The report covers the year 1 April 2011 to 31 March 2012 and includes an overview of progress by all risk management authorities. The Environment Agency plans to produce a similar report every year with a more detailed report every six years. The report produced every six years will review the application of the National Flood and Coastal Erosion Risk Management Strategy for England and how flood and coastal risks are changing.

The Environment Agency's biennial report on reservoir safety provides further detail on the management of the flood risk from reservoirs. The latest biennial report on reservoir safety[1] covers the period 1 April 2009 to 31 March 2011.

1.1 Scale and impacts of flood and coastal erosion risks

The Environment Agency estimates that 2.5 million properties in England are at risk of flooding from rivers and the sea[2] . There are an estimated 3.8 million properties susceptible to surface water flooding, this includes around one million that are also at risk of flooding from rivers or the sea[3]. The Environment Agency is working with LLFAs to update the national scale assessment of surface water flood risk. It is estimated that nearly 1.3 million hectares of agricultural land is at flood risk from rivers or the sea or from both. This includes 58% of the Grade 1 agricultural land in England[4].

Coastal erosion and landslides on the coast affect smaller areas of land than floods but cause permanent loss to property and infrastructure. Such losses can have a significant impact on local economies outside the area directly affected. Approximately 700 properties in England are vulnerable to coastal erosion over the next 20 years and a further 2,000 may become vulnerable over the next 50 years[5].

1.2 Climate change and flood risk

On 25 January 2012 the government published the UK Climate Change Risk Assessment[6] (CCRA), the first assessment of its kind for the UK and the first in a five year cycle. This assessment provides information to policy makers on the risks and opportunities from climate change and the vulnerability of the UK.

The CCRA highlighted flood risk as one of the most important natural hazards facing the country and indicated that it is likely to increase significantly. Increases in the frequency of flooding may affect people's homes and wellbeing (especially for vulnerable groups) and the operation of businesses and critical infrastructure systems.

Results from the CCRA show that for England, annual average damage to properties due to flooding from rivers and the sea is projected to rise from about £1 billion today to between £1.8 billion (low emissions scenario) and £10.7 billion (high emissions scenario) by the 2080s, assuming current defences are maintained but not improved.

1.3 Flood events

The Environment Agency has collated records on properties flooded during the year 1 April 2011 to 31 March 2012 (Table 1). It is likely that some instances of surface water flooding are not fully reflected within these figures. The Department for Communities and Local Government is working with the Environment Agency and local authorities to produce a more comprehensive picture on actual flooding for future years.

Table 1: Properties flooded (commercial and residential) (1 April 2011 - 31 March 2012)

Environment Agency Region	Properties flooded
Anglian	5
Midlands	22
North West	32
South East	7
South West	350
Yorkshire and North East	101

The reported property flooding in South West was predominately due to surface water flooding in the Bournemouth and Poole area that occurred following heavy rainfall in August 2011.

During the summer and autumn of 2012 there was widespread flooding across England. Provisional figures indicate approximately 5,200 properties flooded up to the end of October 2012. These figures are subject to change based on further information from Communities and Local Government. Further details of these flood events will be included in the report for 2012/13.

2 Progress in managing flood and coastal erosion risks

The Act progressed many of the actions from Sir Michael Pitt's review into the flooding during the summer of 2007. One of the main purposes of the Act was to set out new responsibilities for the management of local flood risks namely from surface water, groundwater and smaller watercourses. The Act gave lead local flood authorities (LLFAs) responsibility for the management of these risks and promoted partnership working and cooperation between all bodies with a role to play in the management of flood and coastal erosion risks.

2.1 Managing flood and coastal risks

2.1.1 Spatial planning

Inappropriate development in the floodplain increases the risk of flooding to people and property. By avoiding unnecessary development in areas of risk and making buildings which are in areas of risk more resilient to flooding, risks can be reduced.

The Environment Agency works in partnership with local planning authorities by advising on planning consultations in high risk areas and was consulted for detailed flood risk advice on 10,156 planning applications. Evidence from 2011/12 shows that Environment Agency advice continues to be followed in the vast majority of cases.

Across all development types, 2011/12 is the sixth year in succession[7] in which over 96% of planning applications (where the outcomes are known) were decided in line with Environment Agency flood risk advice. In 2011/12 over 99% of the 47,652 new residential units were decided in line with Environment Agency flood risk advice.

In 2011/12 all planning appeals where flood risk was an issue were either dismissed or allowed with conditions which fully addressed flood risk concerns. The Secretary of State for Communities and Local Government did not call-in any applications for determination for flood risk reasons under the Town and Country Planning (Consultation) (England) Direction 2009[8].

2.1.2 National Planning Policy Framework

In March 2012, the Department for Communities and Local Government issued the new National Planning Policy Framework (NPPF). It sets out the Government's planning policies for England and how these should be applied. The NPPF replaces the existing Planning Policy Guidance Notes (PPGs) and Planning Policy Statements (PPSs).

This new planning framework recognises the importance of considering flood and coastal erosion risk in planning and technical guidance[9] was published in support of this by the Department for Communities and Local Government in March 2012. The Environment Agency published a quick guide[10] covering flood and coastal risk in May 2012. The Environment Agency remains a statutory consultee for planning applications (except for minor development) in flood risk areas and large developments in Flood Zone 1. The Secretary of State's powers to call-in major development applications in areas at risk of flooding also remain unchanged.

2.1.3 River and sea flood risk management schemes

Flood defences and flood storage schemes are effective ways of reducing flood risk to households and businesses. Schemes must be technically, environmentally and economically sound. During 2011/12 capital investment reduced the risk of flooding for 44,030 households. Of these, 17,250 were at very significant or significant risk and 1,592 were in the most deprived areas.

Deptford Creek Frontages

Major schemes completed during the last year include the Altmouth Pumping Station in Merseyside (9,983 households) and Deptford Creek Frontages in London (8,094 households).

Individual property adaptation measures, such as flood boards or air brick covers, can reduce flood risk. During 2011/12 the Environment Agency administered grants with funding from Defra to provide individual protection to 1,135 households.

2.1.4 Surface water flood risk management schemes

In March 2010 Defra announced £5 million funding for 49 local authorities to reduce the risk of surface water and groundwater flooding. Up to March 2012, 52 schemes have been completed benefiting over 1,000 properties. The schemes include holding back runoff before it enters a watercourse or drain system and diverting flows away from properties. Sustainable drainage systems (SUDS) have been used to manage flooding and provide improvements to water quality and create habitat.

Selsey West Beach scheme, West Sussex

Following the introduction of the new Flood and Coastal Erosion Resilience Partnership Funding approach, risk management authorities are now able to apply for capital funding through grant in aid for schemes to reduce the risk from surface water and groundwater flooding.

2.1.5 Coastal erosion schemes

Local authorities and the Environment Agency, working with other risk management authorities, reduced the risk of loss from coastal erosion for 700 households during 2011/12. Of these, 550 will be protected for more than 20 years. Major coastal erosion schemes include Hythe to Folkestone Beach Management in Kent (438 households) and Selsey West Beach, West Sussex - Beach Recharge (116 households).

2.1.6 Maintaining flood risk assets

Risk management authorities, including the Environment Agency, internal drainage boards and local authorities maintain and operate assets to reduce the risk of flooding. Activities include closing flood gates and barriers, operating pumps, clearing channels and trash screens and carrying out regular exercises to ensure a quick response to flooding.

'High consequence assets' are defences where there would be a high impact on people, property or land if they did not work as designed. At the end of 2011/12, 98% of these high consequence assets were in the required condition.

The Environment Agency published an updated flood and coastal risk management asset maintenance protocol[11] in December 2011. The protocol describes how the Environment Agency is adopting a consistent approach to the maintenance of assets. It also sets out how the Environment Agency will work with others to manage any change.

As of 31 March 2012, 17% of LLFAs have a register of structures and features which are likely to have a significant effect on flood risk in their area. A further 78% of LLFAs are currently developing their registers. This register is required under Section 21 of the Act.

2.2 Preparing for and responding to flooding

2.2.1 Public awareness and preparedness

All risk management authorities and community groups, including the National Flood Forum, are working to make people more aware of flood risk. Campaigns and events run by the National Flood Forum, the Environment Agency and local authorities make the public better prepared and able to take appropriate action during a flood.

Improving the awareness of flood risk will continue to be an important part of FCERM because the majority of people living in areas at risk from flooding continue to underestimate the risk to their property (Figure 1). An Environment Agency survey on public awareness of flood risk carried out in January and February 2012 highlights that the focus on local priority areas has had a positive impact on flood awareness, acceptance and action. However, the overall impact declined in 2011/2012 due to this focus on local priority areas in preference to national scale campaigns. This research recommends that broader 'nationwide' communication initiatives need to be increased and extended in order to have the necessary positive effect on flood awareness, acceptance and action.

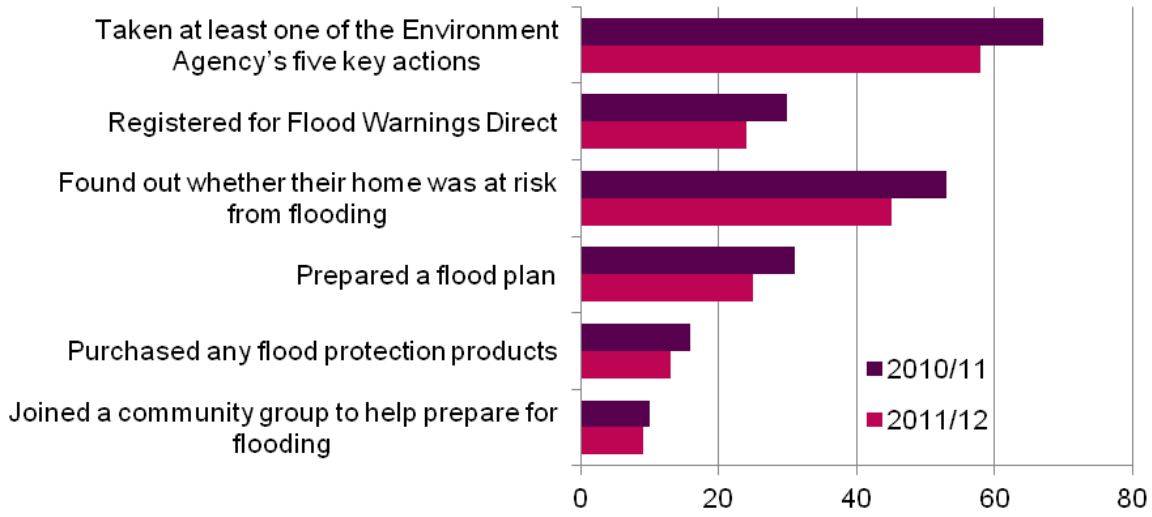


Figure 1: Actions taken by the public (% of population at high risk - source: Environment Agency survey 2012)

2.2.2 Providing flood forecasting and warning services

The Environment Agency, Met Office, Flood Forecasting Centre (FFC) and other partners continue to develop and provide flood forecasting and warning services.

Accurate and reliable warnings of flooding from rivers and the sea require good information. This year, the UK Coastal Monitoring and Forecasting (UKCMF) service[12], completed a three year programme of upgrades for the national Tidal Gauge Network. This will improve the reliability and quality of data from this network.

Rainfall information is required to support forecasting of river flooding. This year the Environment Agency and Met Office started a three year programme to install new weather radars[13] and established a new radar site in East Anglia.

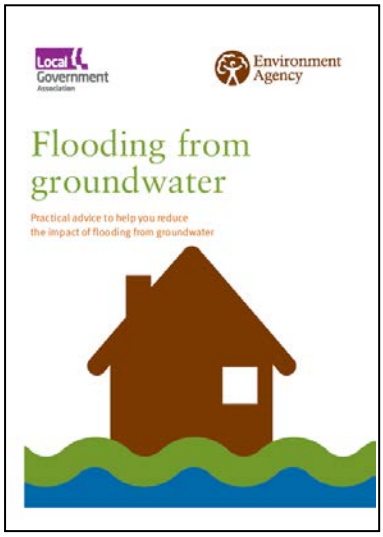
Further improvements have also been made to forecasting tools and products. The UKCMF service has introduced a new technique to improve forecasting of storm surges, so that alerts can be issued earlier. The FFC has created a surface water decision-making tool to improve the quality of flood forecasts for surface water. It also has started using a new country-wide fluvial forecasting tool (The Centre for Ecology and Hydrology's "Grid 2 Grid" model) that will provide a national forecast of flooding to complement local forecasting models.

2.2.3 Warnings and alerts

In 2011/12 nearly 60% of households and businesses, 1 million properties, at the highest risk of flooding can receive a direct warning service. In 2009/10 the Environment Agency introduced an opt-out sign up method to the flood warning service, Extended Direct Warnings (EDW). This has resulted in the number of high risk properties being able to receive a direct warning via the Environment Agency's Floodline Warnings Direct rising from 14% in 2008/09 to 46% in 2009/10 and 56% in 2010/11. This has been achieved by using EDW to add over 650,000 extra properties at the highest risk onto the flood warning system.

In 2011/12 nearly 83% of homes and businesses in the floodplain are covered by a flood warning service, this compares with 68% in 2008/09.

The FFC has improved its service to customers by updating the daily Flood Guidance Statement to cover all sources of flooding.



Between November 2011 and February 2012 the Environment Agency introduced a new service for those at the highest risk of groundwater flooding. For the first time, people who have been flooded by groundwater in the past can receive direct warnings and monitor warnings in force on our website.

Two applications to give people better access to warning information were launched this year. The first is a free widget[14] for websites that allows people to monitor the flood warnings in force and link to these on the Environment Agency website. The second is a Facebook application[15], developed by Shoothill, which allows people to monitor any location and get alerts to their profile page and by email. The application won the Innovation in Enterprise award in The Guardian and Virgin Media Business's 2012 Innovation Nation[16] awards, in June 2012.

New technologies have also been used to provide more targeted warnings to commercial users and other organisations. In summer 2011 the Environment Agency gave third parties direct access to their live flood warning information under licence. This has allowed private companies to develop bespoke flood warning services to businesses, agencies and infrastructure operators at no cost to the taxpayer.

Building on this success, the Environment Agency launched a new service for all Category 1 and 2 organisations under the Civil Contingencies Act in the autumn of 2011. This new service allows subscribers to receive flood warning information for specific areas.

2.2.4 Flood response and recovery

When flooding occurs LLFAs have a duty to determine whether or not an investigation is necessary. Since April 2011, 18 LLFAs report that they have investigated flooding incidents and published their findings in line with their new duty under Section 19 of the Act. A number of LLFA investigations are still underway and are yet to be published at the time of this report.

The Environment Agency supported the National Flood Forum in procuring a Flood Recovery Trailer and a Flood Information Trailer. The National Flood Forum sends its staff to flooded areas and they use the trailers as bases to advise people who have been flooded and need help and support.

2.3 Relationship to the environment

The way in which the risks posed by flooding and coastal erosion are managed directly impacts both positively and potentially negatively upon the natural environment including rivers, wetlands and the coast. Building and improving defences for the benefit of people and property provides the opportunity to protect and improve important natural features and habitats.

The Environment Agency creates habitat associated with flood risk management schemes across England to meet legal obligations in the EU Habitats and Birds Directives. This is to ensure that the programme of flood and coastal erosion risk management activities meet the requirements of these directives with a positive net effect.

As part of flood and coastal erosion risk management activities, 4,433 hectares of water dependent habitats were created or improved. A further 25 hectares of intertidal habitat were created, 8.7 km of protected rivers improved and 87 hectares of other habitat were created.

Most of the increase in water dependent habitat is the result of the management of 4,116 hectares on the Somerset Levels and Moors by the Parrett and Axe Brue Internal Drainage Boards and the Environment Agency.

Other notable schemes completed during the year include the Rye Harbour Farm managed realignment and the River Wensum (East Sussex) restoration. The Rye Harbour Nature Reserve is now managed as a partnership led by Sussex Wildlife Trust (SWT) and includes the Environment Agency, the Friends of Rye Harbour Nature Reserve and private landowners.

Rye Harbour Farm, East Sussex

2.4 Investment and value for money

During 2011/12, the Environment Agency spent a total of £600.8 million on flood and coastal risk management in England. Within this, £297.5 million was spent on capital investment including £37.9 million distributed to local authorities and internal drainage boards. Defra provided in total £550.3 million in flood defence grant in aid, including £22.3 million in one-off funds from other Defra budgets following internal reprioritisation. Other sources of income included £33.7 million in local levy from

Regional Flood and Coastal Committees, £6.5 million in external contributions towards capital projects and £10.3 million of other flood and coastal risk management income.

The large capital schemes completed during 2011/12 will create £13.25 billion of benefit compared with their cost of £824 million with an average benefit cost ratio of 16 to 1.

During 2011/12 the Environment Agency's national capital programme management service and procurement saved £6.1 million through efficiencies in FCERM schemes. This includes the River Trent project in Nottingham. The scheme was re-designed to use only the materials that could be generated on site avoiding the purchase of additional materials. The elements of the scheme completed in 2011/12 protected 3000 properties to a 1 in 100 year standard of protection. By the time the whole scheme is completed it will protect a further 13,382 properties.

The Nottingham Trent scheme opened in September 2012 and further details will be included in the report for 2012/13.

Nottingham Trent left bank flood alleviation scheme, Attenborough section

2.4.1 Policy developments - Partnership funding

In May 2011, Defra announced a new approach to funding capital projects in England that reduce flood and coastal erosion risks - Flood and Coastal Erosion Resilience Partnership Funding (Partnership Funding). In 2011/12 the Environment Agency Board applied the new funding model to capital allocations for the financial year 2012/13. The impact of the new system, which started in financial year 2012/13, will be covered in the report for 2012/13.

The new policy allows risk management authorities to apply for grant in aid and encourages them to secure funding from other sources.

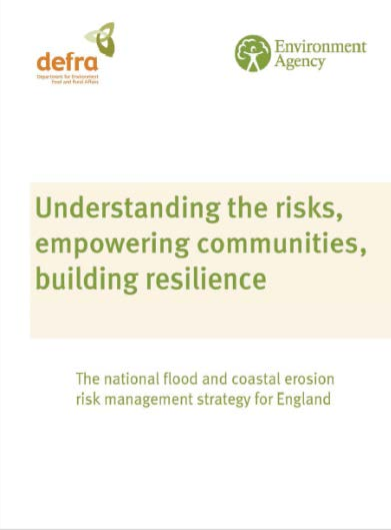
The main purpose of these reforms was to:

- make sure that investment is not constrained by what government alone can afford to do
- increase certainty and transparency over the level of Defra funding for each project
- leverage further investment towards worthwhile projects
- allow a greater level of local ownership and choice
- encourage more cost-effective solutions
- better target Defra funding toward areas at significant risk and deprivation

2.5 Legal and policy developments

The new legal framework to support the effective management of flood and coastal risks continues to be implemented by Government alongside their supporting polices. This section describes the legal and policy developments related to the management of flood and coastal erosion risks from 1 April 2011 to 31 March 2012.

2.5.1 Flood and Water Management Act



In May 2011, the Environment Agency and Defra produced the first National Flood and Coastal Erosion Risk Management Strategy[17] for England as required under the Act.

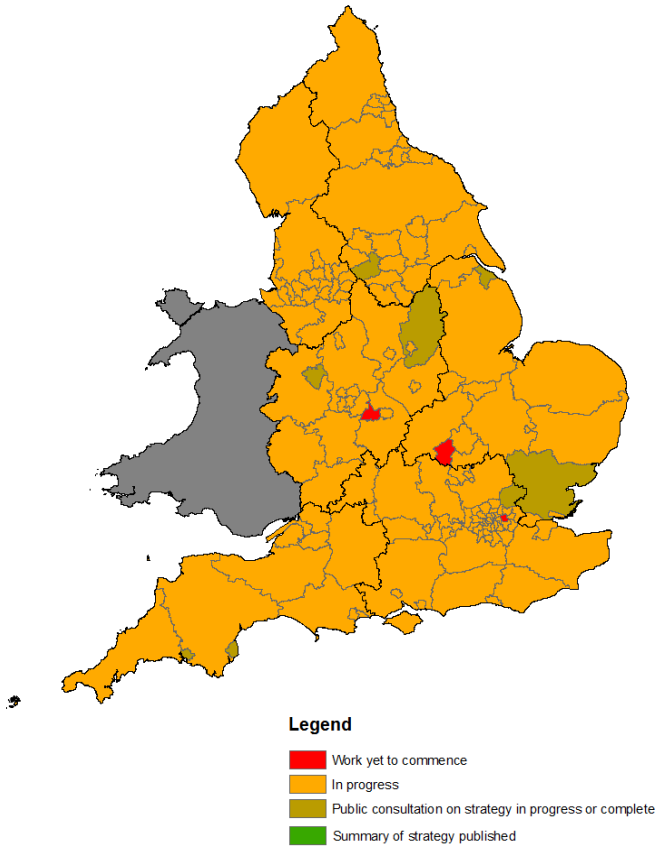
The strategy describes the roles and responsibilities of the different risk management authorities involved in flood and coastal erosion risk management (FCERM) and the principles they should all follow when managing the likelihood and consequences of flooding and coastal erosion.

The strategy received Parliamentary approval on July 2011 and provides the first statutory framework for how communities, the public sector and other organisations will work together in England to manage

flood and coastal erosion risk.

Under the Act, lead local flood authorities (LLFAs) are responsible for developing, maintaining, applying and monitoring a strategy for local flood risk management (local strategy) in their area.

Local strategies describe the local flood risk in an area and set out the actions that will be taken to manage it. Local strategies will help prioritise investment decisions and provide information on how flood risk will be managed. They provide a starting point for LLFAs to engage with communities. Funding for the LLFA role has been available since April 2011.



The Local Government Association, working with representatives of Defra, the Environment Agency and other risk management authorities, produced guidance to help LLFAs develop their local strategies. The first version was published in February 2011 and updated in November 2011.

The guidance, agreed with Defra, states that local strategies are expected to take 12 to 18 months to develop.

Feedback from all 152 LLFAs in England shows that, as of the 31 March 2012, seven LLFAs have consulted or are consulting on their local strategies; 142 local strategies are in progress and three have not yet started on their strategies (Figure 2).

Figure 2: LLFA Progress in developing local strategies

Throughout this reporting year the Act has continued to be commenced in stages. The main Sections that came into force were:

- April 2011 (and October 2010) Section 17 - Levies. Enables the Environment Agency to issue a levy to a LLFA for FCERM functions.
- April 2011 Section 19 - Local authorities: investigations. Places a duty on LLFAs to investigate flooding.
- July 2011 Section 11 - Effect of national and local strategies: England. Requires authorities to act consistently with them.
- July 2011 Section 18 - Environment Agency: reports. Requires the Environment Agency to report on FCERM.
- October 2011 Section 27 - Sustainable development. Requires LLFAs, district councils, internal drainage boards and highways authorities to aim to

make a contribution towards sustainable development when exercising their FCERM functions. Supporting guidance[18] published by Defra.

- December 2011 Section 38 (Environment Agency) and 39 (local authorities including internal drainage boards): Incidental flooding or coastal erosion. Gives new powers to carry out works that cause flooding and coastal erosion for environmental purposes.

2.5.2 Flood Risk Regulations (2009) implementing the EU Floods Directive

The Flood Risk Regulations 2009 (the Regulations) implement the requirements of the European Floods Directive. The Directive aims to provide a consistent approach to managing flood risk across the European Union. The Regulations put in place a six year cycle of assessing, mapping and developing plans to manage flood risk.

To meet the requirements of the Regulations, all 152 LLFAs completed a Preliminary Flood Risk Assessment (PFRA) of local flood risks. This is the first national risk assessment of local flood risks and forms the basis of information for local strategies. The Environment Agency reviewed and published the PFRAs (or links to PFRAs on local authority websites) ahead of the 22 December 2011 deadline and reported to the European Commission by 22 March 2012.

As part of the PFRA process LLFAs could identify Flood Risk Areas, defined as areas of significant local flood risk as described in Government guidance. The next stages of producing maps and plans only have to be prepared and reported to the European Commission for the Flood Risk Areas. Ten areas[19] have been agreed in England for the first cycle. The Environment Agency is currently reviewing three additional proposed areas.

Outside of these areas, LLFAs can manage local flood risks through their local strategies under the Act. The Environment Agency was given an exemption from preparing a PFRA and will be using existing maps and plans to apply the Directive requirements for rivers and the sea across England.

The Environment Agency is working with other risk management authorities, particularly LLFAs, to progress the next stages of the Regulations. The Regulations require publication of flood hazard and risk maps by December 2013 and flood risk management plans by December 2015.

2.5.3 Other legislative developments

The Localism Act that received Royal Assent in 2011 also impacts upon the management of flood and coastal risks. The Act makes changes to the planning system. It requires LLFAs to establish Overview and Scrutiny Committees to look at FCERM issues. The Planning Act 2008 and Community Infrastructure Levy Regulations 2010 introduced the Community Infrastructure Levy which is intended to fund new infrastructure projects, which may include flood-related infrastructure.

2.5.4 Flood insurance

The UK benefits from one of the few private insurance markets for flooding in the world. Cover for flood damages is included as standard in virtually all household insurance policies in the UK, even in areas at significant flood risk.

The Government has an agreement with the insurance industry, called the 'Statement of Principles' which is due to expire on 30 June 2013. Whilst the Statement of Principles provides some reassurance about the continued availability of flood insurance, the agreement does not influence its affordability. The Government is working with the industry to ensure that insurance against flooding remains widely available and affordable.

Over the reporting period, the Environment Agency and Defra have been working with the insurance industry and other partners to establish a common methodology to help insurers take better account of the increased level of protection provided through the use of property-level protection measures, when offering insurance terms to prospective policyholders.

The Environment Agency has also assisted Defra in working with the insurance industry and the National Flood Forum to help people living in flood risk areas understand the benefits of home insurance and how to get specialist help if they have not found affordable insurance cover through a mainstream insurance provider. A guide, Obtaining flood insurance in high risk areas[20], has been published in July 2012 and further details will be included in the report for 2012/13.

2.5.5 Water White Paper

In December 2011, the Government published the Water White Paper - Water for Life[21]. It describes a vision for future water management in which the water sector is resilient with more efficient and customer focused water companies, and in which water is valued as the precious and finite resource it is. The resulting Draft Water Bill[22] was published on 10 July 2012.

2.6 Partnership working to deliver FCERM

Risk management authorities and other organisations work in partnership to manage flooding and coastal erosion risks. The Act emphasises partnership working building on existing approaches.

To support partnership working, statutory guidance on Co-operation and requesting information[23] was produced by Defra and the Environment Agency in May 2011.

2.6.1 Regional Flood and Coastal Committees

In October 2011, eleven Regional Flood and Coastal Committees (RFCCs) replaced the Regional Flood Defence Committees. RFCCs are approved by the Minister and established by the Environment Agency under the Flood and Water Management Act 2010. They bring together members appointed by LLFAs and independent members with relevant experience to:

- ensure there are coherent plans for managing flood and coastal erosion risks across catchments and shorelines
- promote efficient, targeted and risk-based investment in FCERM that optimises value for money and benefits for local communities
- provide a link between risk management authorities and other relevant bodies to engender mutual understanding of flood and coastal erosion risks

With ministerial approval, the Severn-Trent RFCC split into two committees the Severn and Wye and the Trent on 18 April 2012 to better represent local interests.

2.6.2 Partnership working between risk management authorities

Throughout the year LLFAs have continued to develop relationships to help manage local flood risk. These groups vary in membership to meet local needs, with some crossing local government boundaries. These partnerships include local authorities, the Environment Agency, water and sewerage companies, internal drainage boards and others.

Water and sewerage companies have supported these partnerships to perform their duties under the Act and national FCERM strategy. Their work is varied, with some of their recent activities covering whole RFCC areas and others more local LLFA areas. Some examples include:

- engaging with risk management authorities, particularly LLFAs and the Environment Agency and establishing active links with RFCCs
- establishing data sharing agreements with the Environment Agency and other risk management authorities such as LLFAs
- developing catchment scale plans, piloting new techniques and approaches and working in partnership with others to jointly fund schemes
- improving the resilience of water infrastructure and reducing sewer flooding

Case Study: Transfer of flood risk management powers

During 2011/12, a pilot project to reclassify eight watercourses in the River Lugg catchment in Herefordshire was successfully completed.

All the watercourses are part of an asset management system where the potential consequences of failure are low and the Environment Agency was no longer able to justify continuing investment.

Potential land drainage benefits were identified that could be more appropriately managed locally by the River Lugg Internal Drainage Board.

Following a public consultation permissive powers to carry out works on 38 km of rivers have been transferred from the Environment Agency to the River Lugg Internal Drainage Board.

This is an excellent example of risk management authorities working together to deliver a more efficient and effective flood risk management service by transferring powers and responsibilities back to local communities.

Dr Anne Wheeler, Chair English Severn and Wye Regional Flood and Coastal Committee FCC

2.6.3 Examples of partnership working

Coastal groups include coastal local authorities, the Environment Agency, Natural England and other organisations with coastal management responsibilities. These groups work in partnership to manage coastal risks. They are a forum for strategic coastal management, principally by developing Shoreline Management Plans and for showcasing local initiatives.

The Environment Agency and the Association of Drainage Authorities jointly developed guidance on the establishment of new internal drainage boards. This was piloted through consultations in Cumbria and published in March 2012.

Local authorities, the police, fire service, the Environment Agency and other organisations continue to work together through 38 Local Resilience Forums to prepare for incidents and emergencies. Many Local Resilience Forums are establishing flood sub-groups.

2.6.4 Working with communities

Collectively we can achieve more for communities if we work with them and with the community groups that are established.

The Environment Agency is working in partnership with the Women's Royal Volunteer Service (WRVS), to help older people at risk of flooding in the east of England.

The WRVS volunteers from across the east of England were trained to help 250 older people make personal flood plans.

Case Study: Cornwall Floods - the response

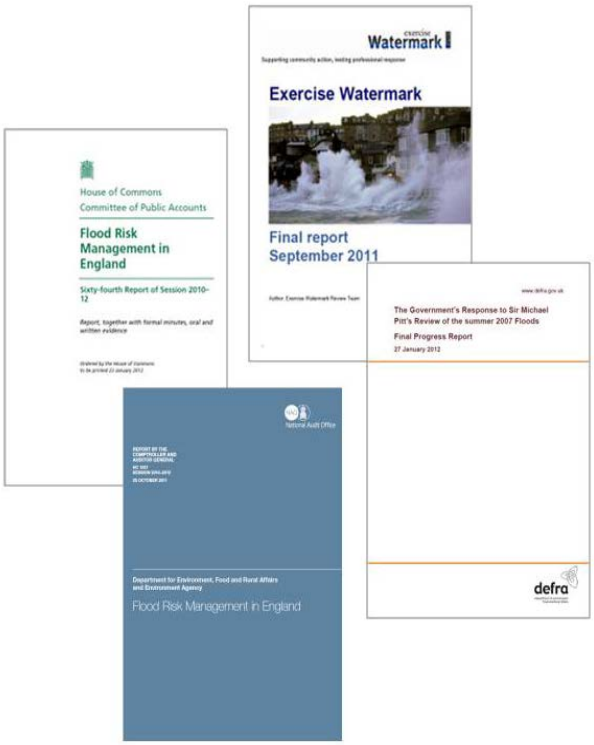
During 2011/12, Cornwall Council, the Environment Agency and South West Water have been working closely with local communities to increase resilience following the flooding in towns and villages in Cornwall in November 2010.

This close working has seen community flood recovery groups formed, with many settlements, such as St Blazey/Par, Mevagissey and Lostwithiel putting together Community Flood Plans. Cornwall Council, with support from the Environment Agency, has been successful in bidding for funds to deliver a Household Level Flood Protection Scheme, which, among various options, provided flood doors (picture above).

In St Blazey and Mevagissey, pilot services have been set up to warn of flash flooding, with rainfall intensity alarms and heavy rainfall alerts triggering actions by local flood wardens from within the communities.

South West Water has carried out upgrades to a surface water pumping station at St Blazey.

2.7 Reviews and inquiries



During the year there have been several notable FCERM reviews and inquiries specifically on funding and how flood incidents are managed.

On 28 October 2011 the National Audit Office (NAO) published its Review of Flood Risk Management in England[24]. This review was an independent evaluation of how public money has been, and is going to be, spent to better manage flood and coastal erosion risk. The NAO recognised the importance of flood and coastal erosion risk management, and recommends how to get better value for money in the future.

The Public Accounts Committee held hearings on the basis of the NAO report, and published its findings[25] in January 2012. The main challenges highlighted by the Committee were long term funding and defining who is responsible for value for money, decision making and overall accountability. The Environment Agency, along with other risk management authorities, is responding to these challenges.

The final report from Exercise Watermark[26] was published in November 2011. This national exercise, carried out in March 2011, tested emergency plans in Government and communities and those of emergency responders. It used scenarios based on severe weather conditions including flooding from the sea, rivers, surface water and reservoirs. The final report contained 36 recommendations that the Environment Agency and other incident response partners are now acting on.

In January 2012 Defra published its final Pitt Review Progress Report[27]. The report showed that 91% of the recommendations made by Sir Michael Pitt have been addressed, with most of the rest due to be completed by December 2014.

2.8 Taking a strategic approach

Managing flood and coastal erosion risks requires organisations with different priorities to work together in partnership. The national FCERM strategy provides a common framework and guiding principles for all partners. Plans at the catchment and coastal cell scale translate these guiding principles into approaches for managing the risks and provide a source of information for local strategies.

2.8.1 Strategic plans for catchments and coastal cells

Understanding and managing flood and coastal erosion risks in a catchment or coastal cell is a key principle of the national FCERM strategy. Catchment flood management plans (CFMPs)[28] and shoreline management plans (SMPs)[29] help organisations including LLFAs work across administrative boundaries.

The Environment Agency works with other organisations managing inland flood risks to produce CFMPs. They help us all plan how to manage flood risk in a more sustainable way across a catchment in the long term (50 to 100 years). Sixty-eight plans have been developed across England. The plan covering the Severn catchment also extends into Wales. The plans for the Wye and Dee catchments in Wales also cover parts of England.

Depending on the level of flood risk now and in the future, areas within the catchment are assigned one of six management approaches. The number of properties covered by each management option is shown in Figure 3.

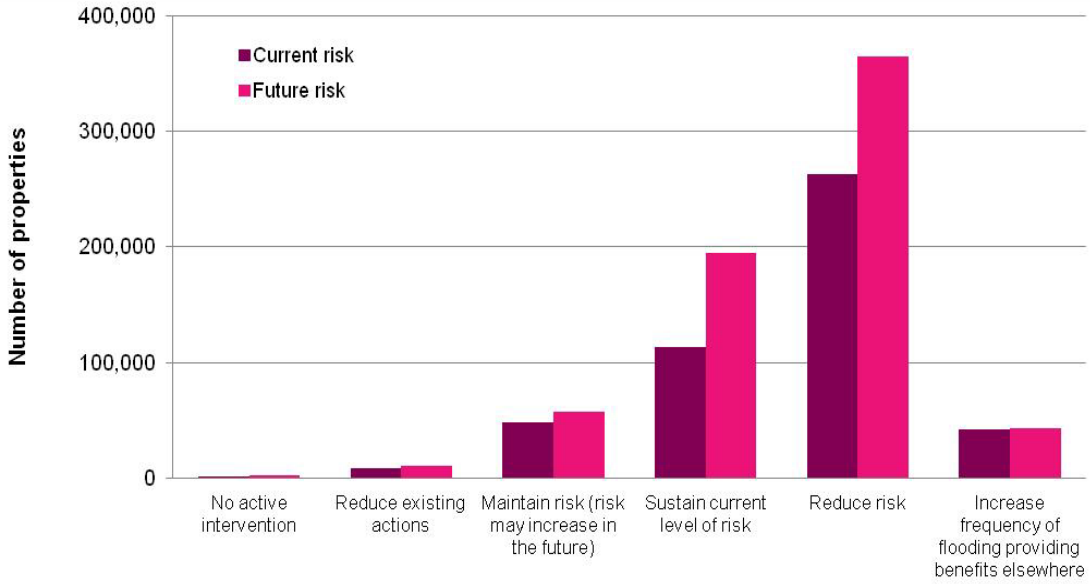


Figure 3 - Assigned management policy by number of properties taken from CFMPs

Shoreline management plans (SMPs) provide a long-term framework for dealing with coastal flooding and erosion in a coastal cell. There are eighteen SMPs covering the coastline in England and a further two SMPs that also cross the border into Wales.

Coastal groups help to develop and implement these plans. In England (including those SMPs that cross the border into Wales), local authorities lead on 16 SMPs, where coastal erosion is the dominant issue, and the Environment Agency leads on 4, where sea flooding is the main issue. These plans were originally produced between 1995 and 1999. Seven of these plans have been reviewed and approved this reporting year.

Using evidence of how the coastal risks may change, SMPs identify a sustainable management approach for each stretch of coastline. The management approach split across the coastline of England is shown in Figure 4.

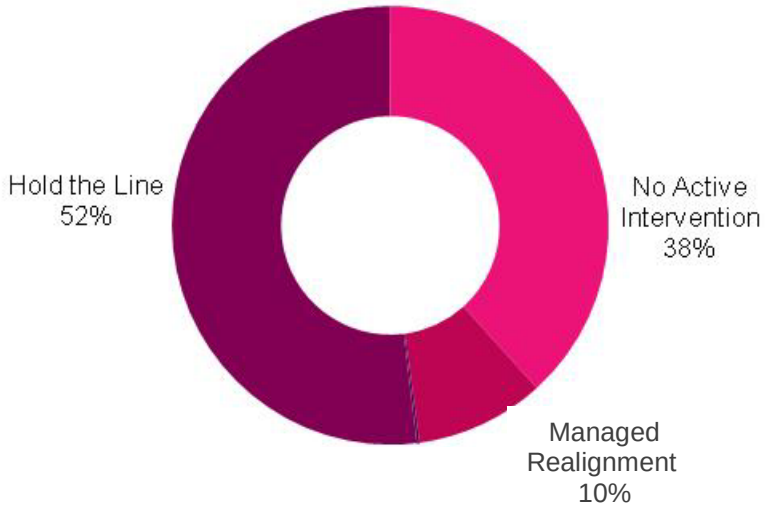


Figure 4 - Management approaches for the coast from SMPs

SMPs and CFMPs are likely to contribute significantly to Flood Risk Management Plans required under the Flood Risk Regulations. A consultation on the approach to Flood Risk Management Plans is taking place during summer/autumn 2012. The management approaches agreed in CFMPs and SMPs will be reviewed as new evidence and information becomes available. In future national FCERM reports, any significant changes in these approaches will be reported.

2.9 Our capacity to deliver flood and coastal erosion risk management

To manage flood and coastal erosion risk effectively organisations need specific skills and resources.

2.9.1 Skills and capacity within the Environment Agency

Throughout this year the Environment Agency has been reviewing the size and structure of its FCERM functions. The structural changes are being implemented from June 2012 and include a greater proportion of staff working at a local level.

The Environment Agency has continued to develop the skills of its FCERM staff. Many of these skills are technical and include engineering, hydrology, modelling, mapping and community engagement.

The Environment Agency and Met Office, through the Flood Forecasting Centre, have continued a programme to support hydro-meteorologists develop their skills. They are seeking professional status for this new discipline.

2.9.2 Skills and capacity of Lead Local Flood Authorities

Defra, the Environment Agency, the Local Government Association (LGA) and others are leading a programme of Capacity Building for local authorities.

During 2011/12, 95% of LLFAs took part in Phase 2 of this programme, with participants from local authorities, internal drainage boards and water and sewerage companies. Since the capacity building strategy was launched in July 2010, 78

workshops have been delivered (the equivalent of over 3,000 training days) on topics including:

- understanding the legislation
- preliminary flood risk assessment
- local flood risk management strategies
- partnership funding, consenting and enforcement
- project appraisal
- medium term planning
- designation of third party assets
- collaborative working
- sustainable drainage (SuDS)

The workshops are supported by e-learning[30] packages available to all risk management authorities. The e-learning has so far received 10,000 hits. An interim appraisal of the effectiveness of these initiatives was carried out in March 2012 and the feedback from the LLFAs was that 90% felt more confident in delivering their role as a result of the capacity building programme.

The Local Government Association (LGA) surveyed local authorities between February and April 2012 to find out about FCERM capacity and skills in local authorities (Figure 5). The response rate for LLFAs was 65% and showed that:

- 76% of LLFAs use expertise from external consultants to support them
- 22% of LLFAs are using secondees from other organisations and 14% are using expertise from other local authorities

The survey also showed that on average, LLFAs have 2.1 full-time equivalents (FTE) directly involved in FCERM activities.

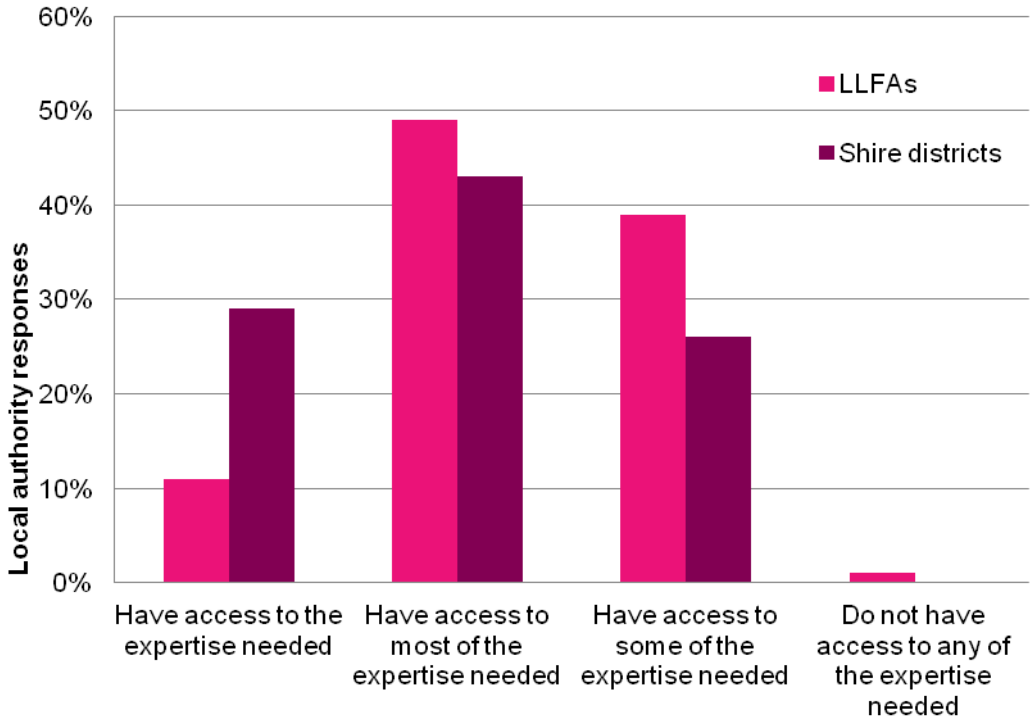


Figure 5: Local authority access to expertise

2.9.3 Developing new flood and coastal erosion risk management technicians

As part of the Capacity Building programme there is a recognised need to develop a new generation of technical experts. The Environment Agency, working in partnership with academics and learning experts, has created options to improve all levels of knowledge and experience. These include:

- further education courses in River and Coastal Engineering, including a foundation degree
- a Civil Engineering Graduate programme

During 2011/12, 31 students were enrolled on the foundation degree course; 7 in the Environment Agency and 24 in LLFAs.

2.10 Expanding knowledge

The Joint Defra / Environment FCERM R&D programme[31] has continued to improve our understanding of flood and coastal erosion risk management and how we can manage these risks. Major scientific developments delivered through this programme and others include:

- The Living with Environmental Change[32] (LWEC) partnership of 22 public sector organisations delivering the FCERM UK Research Strategy. This strategy outlines principles for research collaboration and identifies priority research areas over the next 20 years.
- The conclusion of the collaborative EPSRC (Engineering and Physical Sciences Research Council) led Flood and Coastal Risk Management Research Consortium[33]. These two programmes have improved knowledge and given practical help and guidance.
- The conclusion of collaborative research under the European CRUE ERA-NET (European Research Area Network)[34] partnership. This project has advised on how best to communicate via flood risk maps and developed an appraisal technique for Emergency Plans.

There are also many examples of developments in the form of new tools, data and approaches, including:

- The National Coastal Erosion Risk Mapping (NCERM) project[35] led by the Environment Agency working with coastal local authorities supports a better understanding of coastal erosion risks.
- The Coastal Pathfinder Reviews[36], which explore new approaches to planning for and managing adaptation to coastal change in partnership with their communities.
- The report on Greater Working with Natural Processes[37] in FCERM. The report gives a comprehensive insight into the best ways of working with natural processes.
- A National Flood Forum and Defra project to explore the relationship between insurance and property level protection and a project between the National Flood Forum and Environment Agency to explore the market for flood products for property protection.

As part of the Capacity Building programme for LLFAs, new tools and data sets have been developed. These include:

- Additional LiDAR data[38] gathered to fill topographical information gaps in urban areas. This data supports the assessment and mapping of flood risks.
- A climate change tool[39] to help LLFAs understand the potential medium and long-term impacts of climate change for their flood risk assessments.
- An updated guide for assessing and managing run-off for developments[40].
- An advice note on land drainage consenting and enforcement[41] produced by the Environment Agency to support LLFAs in their new ordinary watercourse consenting and enforcement role.

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