Asset management plan

2011 to 2015

(Update of the 2006/07 – 2011/12 strategy)

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

A key objective in our corporate strategy is the effective management of flood risk and coastal erosion so that people and property are better prepared and protected. To achieve this our supporting flood and coastal risk management (FCRM) strategy challenges us to work more effectively with our professional partners and take a more strategic approach to managing our assets.

Approximately 5.5 million, or one in six, properties are at risk from flooding from all sources across England and Wales[1]. Without sustained levels of investment, flood risk will increase. Our Future Funding in Wales[2] and Long Term Investment Strategy[3] recognise that climate change, the deterioration of assets and continuing pressure to build in areas at risk of flooding, will contribute to increased flood and coastal erosion risk.

Recent experience has improved our understanding of the challenge. The National Audit Office (NAO) examined our approach to asset management in 2006 and made wide-ranging recommendations. We have also benefited from Sir Michael Pitt's report findings from the summer floods in 2007.

Events such as Boscastle in 2004, the summer 2007 floods and the Cumbria floods in 2009 have shown the extreme and damaging nature of floods. However our assets performed well, protecting around £1.2 billion[4] of residential, commercial and industrial property, as well as benefiting agricultural land, environmentally designated sites and critical infrastructure such as power stations and water treatment works. We must continue to learn from these experiences to improve the way we manage our assets. We want to be as efficient and effective as we can, to deliver value for money and to be the best we can.

We have new UK government direction encouraging localism and the big society agenda and the citizen-centred approach of the Welsh Government. By working with partners and communities we can achieve more for less and ensure the work we do is better understood and better meets local needs.

This document explains the Environment Agency's approach to the management of flood and coastal risk assets, that reduce the risk of flooding either from the sea or from main rivers. Approximately half of these assets are managed by the Environment Agency. The rest are managed by Local Authorities, Internal Drainage Boards and many others ranging from large organisations such as utilities to members of the public. We also manage and maintain many other operational assets within our Water Resources, Navigation, Fisheries and Hydrometric functions.

This is the right time to bring our existing Asset Management Strategy up to date with current thinking, new government priorities in England and in Wales, and new funding challenges.

Ken Allison
Head of Asset Management

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[1] Creating a better place 2010 - 2015, Flood and coastal risk management supporting strategy, Environment Agency 2010
[2] Future flooding in Wales: flood defences, possible long term investment scenarios, Environment Agency 2010
[3] LTIS – Investing for the future, flood and coastal risk management in England, a long-term investment strategy, Environment Agency, 2009
[4] NaFRA2009 Weighted Annual Average Damage

Introduction

Scope of this plan

This document applies to Flood and Coastal Risk Management (FCRM) assets that contribute toward flood and coastal erosion risk reduction on main river and sea defences. It includes those assets that we directly maintain and covers our approach to those managed by Local Authorities, Internal Drainage Boards, individuals and businesses. Assets managed by others are described as third party assets and comprise 55% of the total. Section 3 of this document applies to third party assets and the remaining sections apply to assets we maintain.

Roles relevant to asset management

We have powers to do works and to regulate the actions of others on main rivers and the coast for the function of flood and coastal risk management. All references to Environment Agency assets and channels relate to main river and sea defences. A main river is a watercourse marked on a map that has been approved by the Secretary of State for Defra in England or the Minister in Wales.

Local Authorities have powers to do works on other watercourses and coastal erosion protection assets except for watercourses within Internal Drainage Board Districts or public sewers.

The Environment Agency manages 45% of flood risk management assets on main rivers and the coast. Local Authorities, Internal Drainage Boards and individual owners and businesses are responsible for the remaining 55%. Flood risk assets in England and Wales, both Environment Agency and third party, comprise approximately 40,500 structures, 11,600km of defences, 33,600km of maintained channel and 42,300km of natural main river channel[5] with a total value of about £35[6] billion. As part of our supervisory duty we encourage third parties to maintain their assets to an appropriate standard. To support this, and to better understand the nation's flood risk, we inspect all flood risk management assets on main rivers and the coast and through our supervisory role we support coastal authorities who inspect coastal erosion assets.

Outcomes

Delivering sustainable asset management will contribute to achieving the following outcomes of our flood and coastal risk management supporting strategy.[7]

- More properties are better protected from flooding from all sources.
- More properties in disadvantaged communities are better protected from flooding.
- Our assets meet their target condition.
- Our asset maintenance and construction programmes are on track and we have the right balance between constructing new and maintaining existing assets.

[5] Figures based on NFCDD at March 2010 as published in the Assets Fact Sheet
[6] Operational Assets Valuation, WS Atkins, Sep 2010 - £35bn includes EA asset valued at £24bn and third party assets valued at £11bn figures dated April 2010
[7] Creating a better place 2010 - 2015, Flood and coastal risk management strategy, Environment Agency, 2010

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1 Operating our assets

We manage over 2,000 major operating sites, including critical sites such as the Thames Barrier. Operating our assets means activities like closing flood gates, operating pumps, closing barriers and clearing channels and trash screens.

Safety of the public and our staff is of overriding importance. We share best and safe practice throughout our operational teams and comply with statutory requirements for health and safety.

We regularly and routinely undertake flood incident exercises to maintain a high level of operational readiness. We respond rapidly to flooding to operate and monitor our assets to ensure they perform to protect people and property.

We maintain the operational capability of our assets by replacing them or by proactive maintenance before asset failure occurs. This together with the use of operational plans and contingency plans ensures robust and resilient operational response. In addition to managing floods some of our operating assets such as pumping stations and sluice gates control water levels for land drainage and agriculture and support recreational and environmental benefits.

Principles

We will safely operate our assets to protect property and life during a flood.

We will use passive design[8] to reduce operational flood risk.

We will provide more robust and resilient operation of our assets through development of operational plans and contingency plans.

Where safe to do so, supported by our passive design principles and operating plans, we will automate operating structures to improve the value for money of our operational activities and reduce our carbon footprint.

By 2015 we will:

Have improved the overall safety, efficiency and resilience of our operational response by embedding passive design, operating plans and contingency plans into our business

Have reduced our total carbon emissions by 33 per cent by adopting more efficient operating practices.[9]

We will know we are succeeding when:

Our workforce continue to remain safe and we are able to respond effectively to reduce the risk of flooding through prompt and effective action.

We have reduced the cost of operating our assets without compromising our operational effectiveness.

[8] Passive design considers reducing or minimising the need for operational intervention when flooding occurs thus reducing the risk of failure to operate and reducing whole life costs

[9] Based on a 2006/07 baseline figure

2 Maintaining assets and channels

Maintenance is fundamental to effective asset management and to reducing flood risk. Well-designed and delivered maintenance regimes improve the value for money from our assets. They become more reliable, remain safe to operate and last longer.

Proactive maintenance, informed by our inspections, will deliver a higher level of asset resilience and reduce risk of asset failure. We estimate that effective and timely maintenance of rivers and defences prevents damages to people and property of about £6 billion per year[10]. Work to maintain river flows is estimated to contribute about £500M to flood risk benefits and £400M to land drainage benefits[11].

Climate change and rising sea levels are increasing the load on our assets and we need to increase investment in maintenance to sustain their current performance. Our maintenance funding is limited, so we have to prioritise investment to those assets that provide the most flood risk benefit for the lowest whole-life-costs. In some cases where there is little or no flood risk benefit we may reduce or even stop maintenance.

We have powers to maintain and regulate main rivers to ensure water is free to flow without blockage or interruption (conveyance). Where we decide to exercise our powers we can reduce flood risk by clearing overgrown vegetation, dredging and removing obstructions such as fallen trees. This is particularly important in urban areas with bridges and culverts that are more prone to blockage and the consequences of flooding are greatest. We also have powers to require owners of land adjacent to rivers (riparian owners) to remove obstructions that prevent the free flow of water across their land.

We know that land drainage can offer significant benefits to local communities and recognise its importance for the local rural economy. The extent to which we can consider these benefits in deciding the economic case for channel maintenance work is set by UK and Welsh government policy and treasury guidance.

We are conscious of the potential impact of our works on the environment. Over the years, our maintenance practices have evolved to take into account such environmental sensitivities as the bird nesting season, maintaining habitats of protected species and our carbon footprint. We will continue to work with the environment and deliver the outcomes of the Water Framework Directive.

We maintain and operate 194[12] reservoirs in England and Wales which is more than any other operator. In total there are 2106 registered reservoirs that we regulate. The Flood and Water Management Act has established new criteria for defining reservoirs and introduced a risk based approach for their regulation. Once the Act is commenced the number of registered reservoirs will increase.

Principles

We will continue to inspect all flood risk assets and channels at a frequency determined by the level of flood risk and we will repair or replace our assets that are below required condition where it is cost effective and we can afford to do so. We will encourage third parties to maintain their assets to the required standard and use our powers to enforce

[10] System Asset Management Plans 2008 - 2009 Comparison Report, Halcrow, 2009
[11] Benefit calculation considers property and land use (agricultural land). System Asset Management Plans 2008 - 2009 Comparison Report, Halcrow 2009
[12] Based on Nov 2010 figures and prior to the commencement of the Flood and Water Management Act

the removal of channel blockages and obstructions where this is cost effective and in the public interest.

We will improve efficiency by measuring what we do and improving how we do it. We will use computer based time recording and work allocation. Similarly we will automate routine activities to minimise bureaucracy and drive down our costs.

We will have three measures for flood risk assets which are asset condition for defences and structures, reliability of operating plant and the conveyance of channels.

When maintenance of assets becomes uneconomic we will consider options including handing assets over to other operators or landowners where they wish to maintain them.

We aspire to have all of our assets at their required condition within the funding that is available.

When planning our maintenance work we will consider the needs and expectations of local communities and work with them to identify realistic choices within available funds.

We will seek more local involvement from communities, organisations and individuals and we will work with other operating authorities to deliver the flood risk management benefits from FCRM assets in a more efficient and effective way.

We will continue to care for the environment and encourage and support the wider environmental benefits from our activities. We will take into account climate change and the reduction of our carbon footprint in our maintenance plans.

We will use local knowledge, experience, and evidence from science, to inform the most efficient and effective asset and channel management techniques.

We will be an exemplar operator of reservoirs.

By 2015 we will:

Have improved efficiency in asset management by better targeting resources using our system asset management plans (SAMPS) to help plan and programme maintenance.

Have reduced the cost of planning asset management work by streamlining our approaches and automating routine processes.

Have all of our high risk assets at or above their required condition.

We will know we are succeeding when:

Our maintenance becomes more efficient and we can demonstrate value for money when compared to other operators or external contractors.

There is community support for our approach to local maintenance activities and more watercourses are achieving good ecological status.

3 Working with third party asset owners

About 55 per cent of the assets that make up the flood risk management assets in England and Wales on main rivers and the sea are maintained by someone other than the Environment Agency. We refer to these as third party assets. We use our supervisory role to encourage third party asset owners to maintain their assets to the necessary standard. In some critical cases where there is a risk to the public we can exercise our emergency powers and carry out repairs. Where we exercise emergency powers we can reclaim the costs of the works from the asset owner.

Principles

We will follow a risk based approach when working with third party flood risk asset owners on main rivers and the sea to encourage understanding of the importance of maintaining assets to prevent floods.

We will use our powers to intervene and repair or replace third party assets on main rivers and the sea when it is clearly in the public interest and the flood risk benefits outweigh the cost.

Where appropriate we will use our enforcement powers to require riparian owners to undertake work and we will seek to recover the costs of any work we do on a third party asset from the asset owner.

We will use the additional powers given to us under the Flood and Water Management Act, once these powers are commenced, to help protect vulnerable third party assets susceptible to damage or removal, by formally designating them as flood defence assets.

By 2015 we will:

Have improved the condition of third party assets by identifying below required condition third party assets and informing the third party asset owner where work is needed and encouraging them to take action.

We will know we are succeeding when:

Third party asset owners know their assets contribute to flood risk reduction and take the necessary action to manage them better.

We have protected vulnerable assets by formally designating them using new powers in the Flood and Water Management Act.

4 Improving, replacing and building new assets

Most of our capital investment is spent replacing existing assets to continue to protect communities from flooding. The schemes that we build are individually assessed using rules agreed with government to ensure the work is good value for money and reduces flood risk. In the spending review 2007 (SR07) period we reduced flood risk to 184,400 properties (182200 in England, 2200 in Wales), including 10400 in socially deprived areas and created 1,280 hectares of Biodiversity Action Plan (BAP) habitat (1180ha in England, 100ha in Wales)[13].

Building new schemes are major civil engineering undertakings requiring many years of planning, site investigations, impact assessments and most importantly the support of the community. We build new schemes where we can clearly justify that they will reduce flooding, are cost effective and environmentally acceptable.

We aim to deliver flood defences in the most efficient way, learning from experience. We undertake environmental impact assessments on our schemes and use this to design and build schemes that are effective in flood risk reduction and as far as possible have a positive impact on the environment.

Principles

We will work with partners and local communities to find the best solution for them and the wider catchment in order to reduce flood risk and ensure that our schemes take flooding from all sources into account.

We will use our inspections to identify where early intervention is required to replace or improve an ageing asset and prevent asset failure.

We will use passive design[14] principles in our schemes to reduce the long term operational risk and give the best whole life benefit to cost ratio . We will continue to improve efficiency by using innovative methods in design and procurement when building schemes and sourcing materials.

We will actively seek to maximise financial contributions from beneficiaries, developers and other operators and local communities for works that deliver multiple benefits.

Where we improve existing defences or create new defences which include third party assets we will seek to reduce our reliance on third party assets by replacing them with purpose built defences where cost effective.

We will design new schemes to take account of the effects of climate change and for existing schemes we will adopt the flexible 'managed adaptive' approach[15].

We will seek opportunities to use non-structural solutions, such as washlands, and soft engineering, such as willows to prevent scour, to reduce flood risk and seek to improve the ecological status of watercourses.

[13] Figures as reported in Q4 2010/11.
[14] Passive design considers reducing or minimising the need for operational intervention when flooding occurs thus reducing the risk of failure to operate and reducing whole life costs.
[15] Building defences now that meet the current needs but can be readily raised or strengthened in time to meet future needs

We will contribute to the River Basin Management Plans' objectives and work to increase BAP habitats and recreational benefit. We will ensure we comply with the requirements of the Water Framework Directive and Habitats Directive.

Where we can't justify long term community protection schemes then we will consider alternative local solutions such as individual property protection.

By 2015 we will:

Have provided protection to a further 145000 households in England and 2250 in Wales.[16]

Have incorporated passive design[17] principles in our schemes to reduce the long term operational risk, give the best whole life benefit to cost ratio and reduce our carbon footprint.

We will know we are succeeding when:

Communities are better engaged with and supportive of our schemes throughout their development.

Our FCRM programme continues to achieve the maximum benefit and maximum number of properties protected for each pound invested.

BAP habitats and species that we lead on are recovering or increasing.

[16] Environment Agency Board Flood Defence Grant in Aid paper – 3 February 2011
[17] Passive design considers reducing or minimising the need for operational intervention when flooding occurs thus reducing the risk of failure to operate and reducing whole life costs.

5 Developing skills and knowledge

Good asset management requires good planning supported by good decision making. This requires skilled staff and reliable, accessible information. The information systems used to support asset management need to be simple to use, accessible to all who need them, and contain accurate information.

Principles

We will provide mentoring and training, including flood incident exercises, to develop our staff and ensure we have technical and operational resilience. We will continue to focus on improving technical skills to develop capabilities that will help us influence and support our partners.

We will build our knowledge, combining information on work activities, costs and assets to understand the effectiveness and efficiency of our work.

We will establish benchmarks of unit costs and comparison of productivity and value for money against other operators in the flood risk management sector.

We will invest in new technology and working methods where these will reduce the cost of delivering our flood risk service and we will publish relevant up to date information to our partners and the public.

We will collect evidence of asset performance during and after flooding, combining it with local experience and science to inform our decision making. We will make available our experience and knowledge to support local flood partnerships[18] for the wider benefit.

By 2015 we will:

Have asset management staff with improved skills and technical resilience through delivery of our skills strategy[19].

Make better asset management decisions using improved asset information through IT tools in our Creating Asset Management Capacity (CAMC) project.

Have succeeded in sharing our knowledge with local authorities through delivery of our technical capacity building programme.

We will know we are succeeding when:

We and our partners have access to up to date information which accurately reflects the current status of assets and our staff are recognised experts in managing flood risk assets.

[18] Local flood partnership - forums and community groups in England providing valuable local knowledge and insight as well as focus for involving local people and attracting local funding
[19] FCRM Skills Strategy, Environment Agency, 2010

6 Implementation

To manage assets sustainably, we need to continually improve our technical resilience, supporting information, tools and working methods.

The detailed implementation plan and performance targets we agree will be designed to deliver our desired outcomes. Whilst these will depend upon the funding available and how efficient we are, we will focus on the reduction of risk to people and properties.

A high level summary of the implementation plan is included in Appendix 1 and illustrates the principal business change activities to 2015.

Our implementation plan is flexible and subject to regular review ensuring it reflects current constraints, takes advantage of opportunities and is based on the following principles:

Provide an asset management change programme that ensures our priorities are clearly understood and owned by the business.

Take into account the capability of our operational teams to embed and adapt to the changes resulting from the change programme and from other functional requirements.

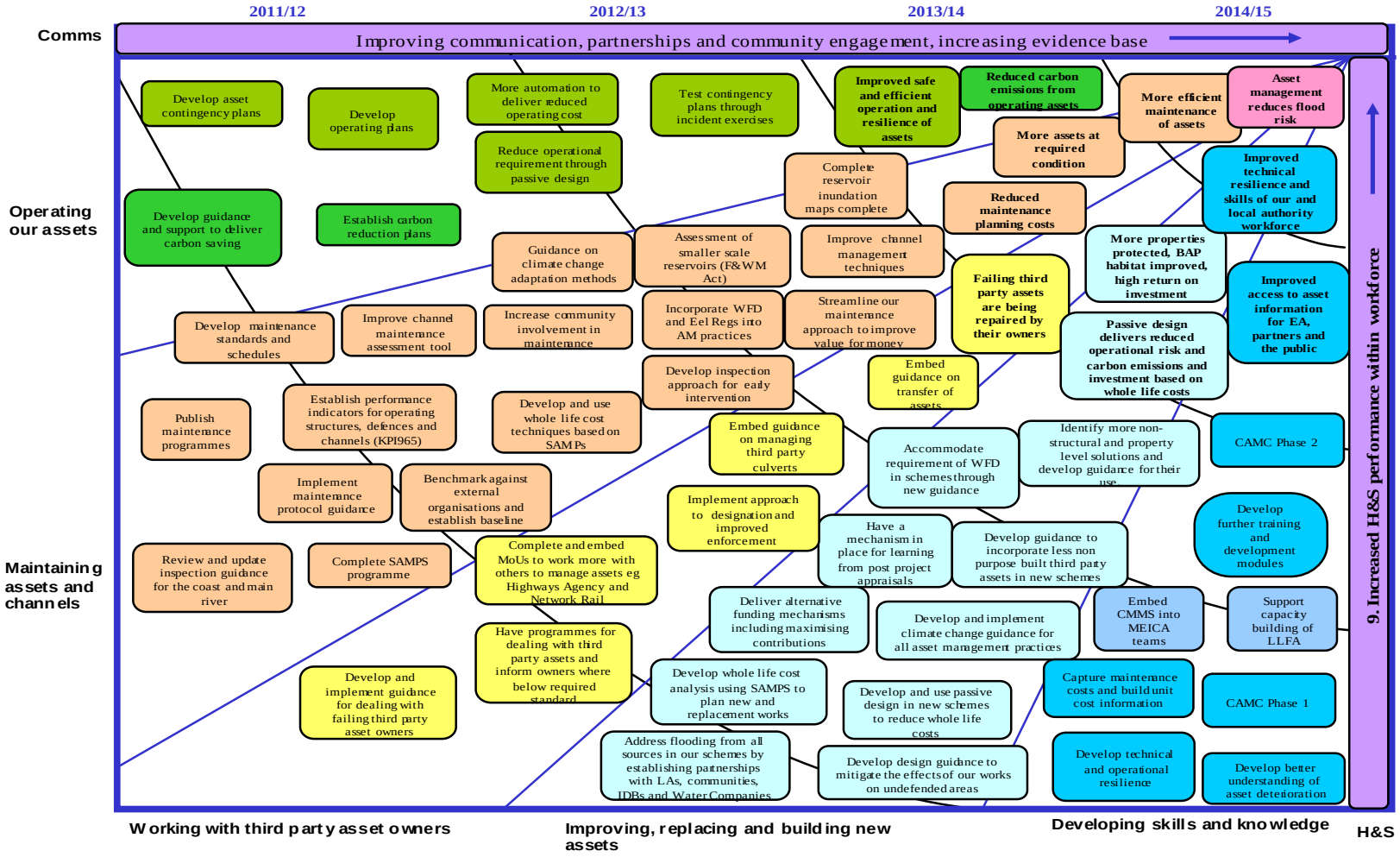
Show clearly how we will achieve efficiencies whilst continuing to reduce flood risk.

Be flexible so we accommodate changes, for example as a result of altered funding or recommendations from a post-flood report.

Use science to provide evidence and support innovation.

Recognise the importance of work with local communities and partners.

Appendix 1 – Outline implementation plan



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