Making space for water

Taking forward a new Government strategy for flood and coastal erosion risk management in England

First Government response to the autumn 2004 *Making space for water* consultation exercise

March 2005

HM TREASURY

Office of the Deputy Prime Minister
Creating sustainable communities

Department for Transport

defra
Department for Environment Food and Rural Affairs

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Contents

Foreword

I am delighted to publish this First Government Response to the points made by stakeholders during the consultation period in autumn 2004 on *Making space for water.*

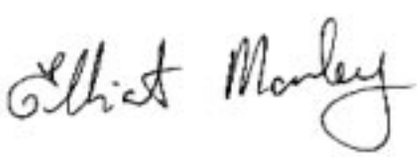
Recent flooding incidents, such as the serious events in 1998 and 2000 and more recently in Carlisle, and the Foresight *Future Flooding* report, have highlighted the need for Government to develop a comprehensive, integrated and forward-thinking strategy for managing future flood and coastal erosion risks in England. This was why the Government published the *Making space for water* consultation document in July 2004. We are now publishing this First Government Response which sets the future agenda for how we start to implement a new strategy, together, over the next 20 years and beyond.

We need to consider how we adapt to climate change, incorporating allowances into our consideration of flooding and erosion risks, ensuring our measures are reversible and adaptable, and that we review our approach on a regular basis using the foundation of best available science.

In our future management of flood and coastal erosion risk, we are committed to applying the principles in the recently-published *Sustainable Development Strategy.* Whilst recognising the need to focus investment in defences where there is the greatest risk in terms of probability and consequence, we also want to consider what more the Government may be able to do to help all communities and individuals prepare for and live with flooding and coastal erosion risk.

This document contains an exciting programme of work across several different aspects of flood and coastal erosion risk management, including how we assess risk, how we approach urban drainage issues, how we manage coastal flooding and erosion, and how we raise awareness and provide support for those at risk.

It also sets the direction of travel. In many areas there needs to be further work to implement the detail of the new strategy. We are committed to further consultation on the assessment of options in the future. We will also publish a detailed delivery plan in summer 2005. But we wanted to share our First Government Response with you now to show our progress so far.



Elliot Morley MP
Minister for Environment and Agri-Environment, Defra

March 2005

The Government confirms the strategic direction of travel set out in the document *Making space for water* published on 29 July 2004. In the light of positive reactions from stakeholders to that document, the Government will, over the 20-year lifetime of the new strategy, implement a more holistic approach to managing flood and coastal erosion risks in England. The approach will involve taking account of all sources of flooding, embedding flood and coastal risk management across a range of Government policies, and reflecting other relevant Government policies in the policies and operations of flood and coastal erosion risk management.

The aim will be to manage risks by employing an integrated portfolio of approaches which reflect both national and local priorities, so as to:

- reduce the threat to people and their property; and
- deliver the greatest environmental, social and economic benefit, consistent with the Government's sustainable development principles.

To deliver that aim the Government is setting in hand a wide-ranging programme of action.

A more holistic approach

We will be taking action to ensure adaptability to climate change becomes an integral part of all flood and coastal erosion management decisions. We will continue to promote a programme of research on the impacts of climate change. We will review current allowances and recommendations for climate change in the light of the outcome of that research.

We will adopt a whole catchment and whole shoreline approach that is consistent with, and contributes to the implementation of, the Water Framework Directive.

We will involve stakeholders at all levels of risk management, and we will achieve a better balance between the three pillars of sustainable development (economic, social and environmental) in our risk management activities.

So as to facilitate an holistic approach that is risk-driven, the Government will work towards giving the Environment Agency an overarching strategic overview across all flooding and coastal erosion risks.

Better management of risk

In order to ensure that risk information increasingly drives our activities, we will continue to develop the coverage and reliability of such information, in particular by including better data on the consequences of flooding and coastal erosion events. We will include coastal erosion on our risk maps, and we will also do scoping work with the aim of including other sources of risk (groundwater, urban drainage and overland flow). We will employ a range of techniques to take better account of environmental and social consequences.

We will also take into consideration the social pillar of sustainable development, extending our risk management tools by:

- expanding our flood warning and flood awareness activities;
- encouraging measures to improve resistance and resilience to flooding, including scoping work on the development and delivery of a pilot on direct aid to individuals; and
- working to improve the evidence base in the case of coastal erosion, and to investigate the practical implications of a wider portfolio of coastal erosion risk management tools. (This is in response to suggestions made during the consultation on *Making space for water* that new tools were needed to help coastal communities adapt to a changing coastline.)

Land use planning

The Government will ensure an effective and pragmatic approach is taken in considering the impact of flood risk in the planning process. We will be consulting on extending the Environment Agency's statutory consultee role in areas that are at risk of flooding. We will strongly encourage the inclusion of Flood Risk Assessments at all levels of the planning process, and we will include gateway questions in the Standard Planning Application form to determine whether a Flood Risk Assessment is required. We will consult on a new Planning Policy Statement (PPS) to replace, and improve the operational effectiveness of, Planning Policy Guidance Note (PPG) 25.

Rural issues

As part of the wider portfolio of responses to flood and coastal erosion risk, we will promote the environmental pillar of sustainable development by making greater use of rural land use solutions such as the creation of wetlands and washlands, and managed realignment of coasts and rivers. Where land and property is needed for works associated with managed realignment under a flood management scheme, the Government will continue to provide the finance for this. We will also be undertaking priority research into the role rural land management techniques (such as cultivation practice and woodland creation) might play in managing flood risk at catchment level.

Integrated urban drainage management

The Government supports the concept of integrated management of urban drainage. We will review ongoing best practice and fund pilot projects so as to test different approaches to integrated management, and to investigate who is best placed to lead in specific urban areas. Pilots will look at upstream catchments where appropriate and may include encouraging rural land management changes.

Coastal issues

The Government will develop a more strategic and integrated approach to managing coastal flooding and erosion risks, while ensuring democratic input into the decision-making process. We will carry out a consultation exercise on the decision-making and delivery roles of local authorities, and on different models for ensuring democratic input into decision-making. The models will include possible roles for current coastal groups and their relationship to existing Regional Flood Defence Committees.

Chapter 1

Introduction: Progress in *Making space for water*

What the Government is doing

1.1 On 29 July 2004 the Government launched the *Making space for water* consultation exercise, which ran until 1 November 2004. The consultation document[1] sought views on a broad range of flood and coastal erosion risk management issues for England to inform development of a new strategy. The intention is that the new strategy:

- builds upon work to take account of sustainable development and the Government's strategic priorities;
- addresses the messages from the Foresight *Future Flooding* report and reflects lessons learned from the flood events in the recent past;
- addresses the challenges and pressures we will face in the 21st century such as climate change, development pressures and rising levels of risk and cost; and
- develops a more integrated and holistic approach to the management of flood and coastal erosion risk using a portfolio of measures.

1.2 The new strategy for flood and coastal erosion risk management for England will cover the next 20 years or so (whilst also looking beyond), with a commitment to regular reviews. Full details of the strategy development exercise, including background documents, project management information and minutes of the Flood Management Stakeholders Forum which has helped inform the process, are available at www.defra.gov.uk/environ/fcd/policy/strategy.htm

1.3 In addition to the full consultation document the Government produced a summary leaflet for the public[2], and a series of successful stakeholder workshops and conferences were held across England[3].

1.4 We received 268 formal responses to the consultation exercise from a wide variety of stakeholder organisations, companies and individuals. The Government would like to take this opportunity to thank all those who participated in such a constructive consultation exercise either directly by submitting a response or through attending one of our consultation events.

1.5 In November 2004 Defra contracted WRc plc to complete a summary of all the formal responses received to the consultation exercise. This is available at www.defra.gov.uk/corporate/consult/responses.htm

1.6 The Government has since taken time to consider carefully all the responses received.

[1] Defra (2004), *Making space for water: developing a new Government strategy for flood and coastal erosion risk management in England: a consultation exercise*, PB 9792. Available at www.defra.gov.uk/corporate/consult/waterspace/consultation.pdf or in hard copy from Defra Publications.

[2] Defra (2004), *Making space for water* summary leaflet, PB 9969. Available at www.defra.gov.uk/corporate/consult/waterspace/summary.pdf or in hard copy from Defra Publications.

[3] Details of these events, held in autumn 2004, are available at www.defra.gov.uk/environ/fcd/policy/strategy/workshops.htm

Chapter 1

Purpose of this document

1.7 This document is the Government's initial response to the *Making space for water* consultation exercise. It sets out the strategic direction of travel on key issues, taking account of the points made by stakeholders during the consultation exercise. The document does not seek at this stage to resolve all the complex policy issues that arise but it indicates, where possible, a programme of work to that end.

1.8 We will issue follow-up documents which report on progress in implementing the strategic vision. In summer 2005 we will publish a detailed Delivery Plan on the Defra website. This will also bring together the different research needs identified in this document as necessary to improve the evidence base for policy making, and will set out how they are to be addressed.

The context

1.9 The wider context of flood and coastal risk management, together with the key drivers, were set out in chapters 1 and 2 of *Making space for water.* Since then Defra has published its Five Year Strategy, *Delivering the essentials of life*[4]. This sets the management of the risks from flooding and coastal erosion under Defra's strategic priority relating to climate change and energy, and commits the Government to managing those risks in a way that furthers sustainable development.

1.10 The UK Government Sustainable Development Strategy *Securing the future* was published in March 2005[5]. This First Government Response to *Making space for water* aims to embed further across future flood and coastal erosion risk management the five principles set out in the sustainable development strategy, namely:

- living within environmental limits;
- ensuring a strong, healthy and just society;
- achieving a sustainable economy;
- promoting good governance; and
- using sound science responsibly.

[4] www.defra.gov.uk/corporate/5year-strategy/index.htm. Printed copies of *Delivering the essentials of life* (Cm 6411) can be obtained from The Stationery Office (ISBN 0101641125)

[5] Securing the future: delivering UK sustainable development strategy is available at www.sustainable-development.gov.uk or through The Stationery Office (ISBN 0101646720).

1.11 Following on from the severe flooding experienced by mainland Europe in 2000, the European Union has shown an increased interest in flood risk management. As mentioned in *Making space for water*, a Communication on flood risk management was published in July 2004. This was consistent with the direction set out in *Making space for water*. The Council of Environment Ministers adopted conclusions on the Communication in October 2004 and agreed that Member States and the European Commission would work together to develop a Flood Risk Action Programme. This programme will cover flood risk mapping and planning, stakeholder involvement and research, and will be developed by a working group comprised of Member States, the Commission and a range of stakeholder groups. The United Kingdom will be actively involved in its development, seeking to ensure that its outcomes are consistent with those of this strategy.

1.12 As far as liaison within the United Kindgom is concerned, in developing this strategy Defra has kept in touch with the devolved administrations, and arrangements are in place to deal with cross-border issues where they arise. In the case of Wales, a similar review is planned to take place later in 2005, on completion of the Welsh Assembly Government's Environment Strategy.

Chapter 2

The new strategic direction for flood and coastal erosion risk management in England

2.1 The overall reaction to the strategic direction proposed in *Making space for water* was very positive. The Government will therefore implement the more holistic approach to managing flood and coastal erosion risks set out in that consultation document, reviewing and seeking amendments to the legislation where appropriate. Later chapters of this document give details on what will be done under relevant policy headings. This introductory chapter addresses some key high-level issues.

Vision and aim

2.2 In *Making space for water* we set out our draft vision of what the new strategy for flood and coastal erosion risk management should achieve. We also set out a draft of the future aim of the Government's strategy. There was general support for these, but a number of comments were made. We have made some modifications as a result, and a revised vision and aim are included below.

Vision: the future as a result of this strategy

The concept of sustainable development will be firmly rooted in all flood risk management and coastal erosion decisions and operations. Full account will be taken of the social, environmental and economic pillars of sustainable development, and our arrangements will be transparent enough to allow our customers and stakeholders to perceive that this is the case. Account will also continue to be taken of long-term drivers such as climate change. Decisions will reflect the uncertainty surrounding a number of key drivers and will where appropriate take a precautionary approach. Decisions will be based on the best available evidence and science.

Flood and coastal erosion risk management will be clearly embedded across a range of Government policies, including planning, urban and rural development, agriculture, transport, and nature conservation and conservation of the historic environment. Other relevant Government policies will also be reflected in the policies and operations of flood and coastal erosion risk management. There will be a mix of policies designed to minimise the creation of new risks (by the way development policy is implemented in areas of flood risk), to manage risk and to increase resistance and resilience. There will be a clear understanding and acceptance of the respective roles of the state, central and local government, other organisations and agencies, and of individuals. The public will be more aware of flood and coastal erosion risks and empowered to take suitable action themselves where appropriate.

Vision: the future as a result of this strategy *(continued)*

There will be increased use of co-funding with other bodies and other schemes so as to secure sustainable and cost-effective management of flood and coastal erosion while at the same time securing a greater overall contribution to sustainable development than would have been possible without co-operation. The true costs of providing, and not providing, flood and coastal defences and other measures will be reflected to a greater extent than at present in individual and commercial decision-making. Expenditure will be focused so as to achieve value for money, and will be prioritised to deliver maximum benefits in line with this strategy.

There will be local participation in decision-making, in particular through the preparation of Catchment Flood Management Plans and Shoreline Management Plans, within a context of national standards and nationwide information on flood risks and prioritisation.

There will be a holistic approach to the assessment of options through a strong and continuing commitment to Catchment Flood Management Plans and Shoreline Management Plans, within a broader planning matrix which will include River Basin Management Plans prepared under the Water Framework Directive and Integrated Coastal Zone Management.

There will be transparent and measurable targets and performance indicators, in terms of managing risks to people, property and the environment, to ensure those responsible for delivering the strategy can be held to account. These measures will drive performance forward and enable the identification and dissemination of good practice solutions.

The results of the strategy will be seen on the ground in the form of more flood and coastal erosion solutions working with natural processes. This will be achieved by making more space for water in the environment through, for example, appropriate use of realignment to widen river corridors and areas of inter-tidal habitat, and of multi-functional wetlands that provide wildlife and recreational resource and reduce coastal squeeze on habitats like saltmarsh.

Aim

To manage the risks from flooding and coastal erosion by employing an integrated portfolio of approaches which reflect both national and local priorities, so as:

- to reduce the threat to people and their property; and
- to deliver the greatest environmental, social and economic benefit, consistent with the Government's sustainable development principles.

To secure efficient and reliable funding mechanisms that deliver the levels of investment required to achieve the vision of this strategy.

Chapter 2

Climate change

2.3 The Government recognises the importance of climate change as a key driver of flood risk and is committed to taking forward the recommendations of the *House of Commons Environment, Food and Rural Affairs Committee Report on Climate Change, Water Security and Flooding*, as outlined in the Government's reply published in December 2004[6].

2.4 So as to ensure better account is taken of climate change, Defra and the Environment Agency will produce revised guidance for use by those implementing flood and coastal erosion risk management measures. The revised guidance, to be finalised by the end of 2006, will ensure that adaptability to climate change through robust and resilient solutions becomes an integral part of all flood and coastal erosion management decisions.

2.5 Defra and the Environment Agency will also continue to promote a programme of research on the impacts of climate change. We will keep under review the current allowances and recommendations for climate change as research results, including those from climate modelling research, become available. The current allowances and recommendations will be reviewed in 2007 and at no more than 3-yearly intervals thereafter.

The whole catchment and whole shoreline approach and the Water Framework Directive

2.6 In the light of responses to *Making space for water*, the current strategic approach to flood management through the development of Catchment Flood Management Plans and Shoreline Management Plans will continue. We will continue to work towards a more integrated and catchment/shoreline-wide approach. The Plans will contribute to the implementation of the Water Framework Directive, and will provide information on flooding processes and flood risk assessments for analyses of pressures and impacts under the Directive. They will also provide the thorough understanding of the opportunities and constraints of flood risk management at the catchment and coastal process unit scale. We will identify flood management policies that will contribute to the implementation of the Directive's programmes of measures. Flood management and coastal erosion activities will be undertaken in ways that are consistent with the Directive.

Stakeholder involvement

2.7 We will implement the arrangements for stakeholder involvement at all levels of risk management as proposed in *Making space for water*. To provide for more informed dialogue with stakeholders more emphasis will be placed on making available user-friendly versions of key explanatory documents and guidance notes to explain key concepts such as the occurrence of flooding, assessment of flood risk, the likely impacts of climate change and the procedures for appraisal-led design. We will also work with partners to achieve multiple-benefit outcomes wherever possible.

[6] *The Government's Reply to the House of Commons Environment, Food and Rural Affairs Committee Report on Climate Change, Water Security and Flooding*, published December 2004, is available at www.publications.parliament.uk/pa/cm200405/cmselect/cmenvfru/101/101.pdf

The social and environmental dimensions

2.8 We will implement the approach set out in *Making space for water* for achieving a better balance between the three pillars of sustainable development. Later chapters of this document explain what we will do to reflect better both the social dimension (including by an expansion of the risk management tools that we will employ) and the environmental dimension (by encouraging the use of 'softer' solutions including realignment of defences and multi-functional washlands where appropriate).

Sustainable rural communities

2.9 A better balancing of the three pillars of sustainable development should promote Defra's strategic objective of sustainable rural communities. Defra has already removed the specific priority that was given under the earlier 1993 strategy to urban areas over rural ones. We will now also reconsider the approach to 'indicative' standards of protection. As a minimum this will relate indicative standards to thresholds of damage, property loss or inundation and will include consideration of threshold values in relation to the 1.3 per cent level of probability adopted by the Association of British Insurers in relation to availability of insurance. The reconsideration will also consider whether upper ranges should continue to discriminate between land uses. As part of the reconsideration we will consider options for more sophisticated approaches than those currently employed.

The future role of the Environment Agency

2.10 To facilitate the new overall approach, the strategic role of the Environment Agency will be extended to cover sources of flooding other than from rivers, the sea and tides. We will also seek the necessary legislative changes to give the Agency a strategic role in relation to the management of coastal erosion risk. We will review the legislative basis, and the organisational and committee structure of the Agency, with the aim of implementing the wider strategic role progressively by 2009.

2.11 The greater strategic role for the Agency will be accompanied by greater engagement of a range of partners from the public, private and voluntary sectors in delivery, in line with Defra's Five Year Strategy, *Delivering the essentials of life*.

Funding

2.12 The Government has increased funding on flood and coastal erosion risk management in England from an outturn of £310 million in 1996/97 to provision of at least £564 million from 2005/06 to 2008/09. This significant increase in funding reflects the importance that Government attaches to managing this risk and the amount of activity already taking place in this area.

2.13 Nonetheless, this document addresses a range of policy ideas that may have resource implications. In some circumstances it may be a case of better targeting, reprioritising existing funds or achieving more through efficiency measures; the development of Output and Performance Measures should assist in this process. In some circumstances additional funding may be required. This may be secured through adopting multiple objective approaches and this will be encouraged where possible. Pilots covering new proposals will also have to consider as part of their scope potential funding provision. Defra will also be working with HM Treasury to consider the resource implications of the proposed direction of travel and possible other sources of funding.

Chapter 3

Risk issues

Improving the evidence base

3.1 In the light of responses to the *Making space for water* consultation, we will continue to develop the coverage and reliability of risk information and mapping. This improvement in the risk evidence base will drive our risk management activities, both in effective awareness raising and decision making.

3.2 The Environment Agency will continue to develop their flood probability maps as part of the current flood mapping strategy for the period to 2008. The Agency will over the same period develop information on the consequences of flooding so that risk data and mapping are available that cover both a range of consequences of flooding as well as its probability. Separate information on probability is important for some aspects of decision making, and such information will continue to be available. But our risk management activities will increasingly be driven by risk information that includes both probability and consequences.

3.3 In assessing the consequences part of the measurement of risk, the Agency will further develop measures to take better account of environmental and social consequences as well as economic ones, through the development of a range of techniques including non-market valuations, and multi-criteria analysis and related techniques. This will allow a more holistic assessment of risk, as envisaged in *Making space for water.*

3.4 Defra will work with the Agency and other operating authorities to widen publicly available risk mapping to include coastal erosion probabilities and risks by 2008.

3.5 Scoping work will be carried out to determine the practicality of including other sources of flood risk in national mapping. These will include groundwater, urban drainage and overland flow. The aim will be to complete preliminary investigations so that, if feasible, the requirements can be incorporated in the five year mapping strategy covering the period 2008–13.

Objective setting and performance measures

3.6 Output and performance measures for the Environment Agency and other operating authorities will be developed by Defra in partnership with the operating authorities for implementation from April 2006. These will aim to maintain or reduce overall levels of risk, balancing the need to protect against the consequences of more extreme events with the desirability of protecting people from more frequent flooding. A basket of measures which makes sure decisions do not lead to distortion of behaviours but support sustainable development will be sought.

Chapter 3

Social justice and community well-being: broadening our risk management tools

3.7 The Government recognises that, even within the improved risk management framework to be introduced under this strategy, there will be cases where investment in capital schemes (on 'hard' or 'soft' flood management/coastal erosion solutions) will not be justified. In such cases and in line with its policies on social justice, the Government recognises that there is a need to consider extending the risk management tools available, in particular to take account of the needs of smaller rural or dispersed communities.

3.8 Subject to further work on the legislative and funding implications, consideration will be given to the expansion of available risk management tools to include:

- expansion of flood warning and flood awareness (chapter 9); and
- development of measures to promote resistance and resilience to flooding, including scoping development and delivery of a pilot scheme in England to test the feasibility of direct aid to individuals to improve the resistance and resilience of their properties (chapter 5).

3.9 We will also take forward work to improve the evidence base and to investigate the practical implications of a wider portfolio of coastal erosion risk management tools (chapter 8).

Guidance on appraising risk management options

3.10 Defra will work closely with the Environment Agency to develop, by 2007, an updated suite of appraisal guidance that reflects the strategic and policy principles set out in this document. The aim will be to split the new guidance into clear appraisal policy guidance issued by Defra and best practice implementation guidance published by the Agency in collaboration with other operating authorities.

3.11 In revising this guidance Defra and the Agency will produce summary versions that explain all the key issues and approaches in a readily accessible form suitable for wide distribution to stakeholders and the general public.

3.12 The revised guidance will take account of latest research and best practice in flood and coastal management and wider policy areas. In particular we will include revised approaches in the following areas:

- links with the Water Framework Directive; and
- better guidance on social costs and benefits, so as better to identify gains and losses to individuals and different sectors. This will also enable the development of more transparent assessments of schemes involving multiple sources of funding, including third party contributions.

Chapter 4

Land-use planning

4.1 Most respondents to the *Making space for water* consultation agreed with the principle that planning new developments should incorporate risk management for flooding, and a majority agreed with the overall thrust of planning policy guidance, in particular that Planning Policy Guidance Note (PPG) 25 in principle provides an effective mechanism for ensuring flood risk is taken into account in the planning process, allied to effective flood resilience and mitigation measures where development goes ahead in flood risk areas. But there were a number of concerns, for example: about how the guidance is applied in practice; how planning authorities interpret the guidance; and about the role and influence of the Environment Agency. Many suggestions for potential refinements to the guidance were made, with the aim of making it operate more effectively.

4.2 Taking account of the broad thrust of these responses, the Government's direction of travel will be to build on existing land-use planning policies to ensure an effective and pragmatic approach is taken in considering the potential impact of flood risk in the planning process. We will strengthen current planning policy guidance on flood risk to guide and influence future planning decisions by planning authorities. We will ensure this guidance is regularly reviewed and updated where necessary.

The role of the Environment Agency

4.3 We acknowledge the force of argument in favour of making the Environment Agency a statutory consultee in relation to planning applications in areas of flood risk. The Government has recently reviewed the role of statutory consultees under the General Development Procedure Order 1995[7]. As part of its wider response to that, the Office of the Deputy Prime Minister (ODPM) intends to consult on extending the Agency's statutory consultee role in relation to flood risk on certain developments in areas that are at risk of flooding.

4.4 We are concerned at the remaining number of instances where planning permission in some areas is granted against Agency advice[8]. Subject to consultation, we will put in place a standing planning Direction under article 14 of the General Development Procedure Order 1995, taking account of the impact this may have on the efficiency of the planning system, and the potential costs to central and local government. (Such a change could require, in a case where a planning authority proposes to proceed with approval of a major development to which there is a sustained objection from the Environment Agency after its intention to proceed notwithstanding an initial objection has been notified to it, to refer the application to the Government Office to decide whether it should be called in for determination by the First Secretary of State.)

Flood risk assessments

4.5 We will strongly encourage the inclusion of Flood Risk Assessments at all levels of the planning process. Strategic Flood Risk Assessments should inform Regional Spatial Strategies and in the development of Local Development Frameworks. We will also emphasise the need for local planning authorities to follow the existing guidance to require site-specific Flood Risk Assessments for development in areas at risk of flooding.

[7] www.legislation.hmso.gov.uk/si/si1995/Uksi_19950419_en_1.htm

[8] Higher Level Target 12 Development and Flood Risk 2003/04 report, Nov 04, EA and LGA, available at www.environment-agency.gov.uk/subjects/flood/571633/?version=1&lang=_e

4.6 We will include gateway questions in the Standard Planning Application form to determine whether a Flood Risk Assessment is required. This will back up the fact that where an application is proposed in an area at risk of flooding, the Environment Agency will be minded to object to applications not accompanied by a Flood Risk Assessment (or not cross-referenced to a Strategic Flood Risk Assessment). This is by far the biggest single cause of Agency objections to development proposals, and better performance on this would be very effective in reducing the number of those objections.

Planning Policy Guidance

4.7 A consultation on whether to review PPG25 was carried out in parallel with that on *Making space for water*. In the light of comments made by stakeholders as part of that consultation and in responses to *Making space for water*, the Government has decided to replace PPG25 with a new Planning Policy Statement (PPS). We hope to consult on a draft later in 2005. We envisage it will:

- provide a stronger and clearer requirement for Flood Risk Assessments;
- be drafted on the basis that it will be followed, subject to consultation, by a standing Direction related to sustained objections by the Environment Agency on flood risk grounds;
- clarify the sequential test that relates types of appropriate development to the degree of flood risk at any particular location;
- reflect the importance of taking account of the consequences, not just the probability of, future flooding events;
- maintain the strong requirement that current and future flood risk is taken into account at all stages in the planning process, in development plans at regional and local authority level, and in framing and considering applications for planning permission;
- clarify the relationship of policy on flooding with other planning guidance; and
- clarify how flood risk from sources other than rivers and the sea, such as flash flooding, groundwater, sewers and the drainage system, can be taken into account in the planning process, reflecting lessons from the pilots on integrated drainage management proposed elsewhere in this document (chapter 7).

Chapter 5

Resilience and resistance

5.1 The majority of responses favoured the approach to resilience and resistance in new buildings set out in *Making space for water*. Several cautioned that resilience should not be a way to sidestep the necessary planning considerations.

5.2 There was broad support for encouraging the owners of existing buildings to incorporate resilience and/or resistance in their properties as appropriate. Views on how this could be encouraged tended to focus on the role of Government or the insurance industry.

5.3 Advice was seen to be key and some form of scheme for flood surveyors, as described in *Making space for water,* was welcomed by the majority of respondents. A significant number felt that this should be industry- rather than Government-led.

Relevance to sustainable communities

5.4 An important aspect of making communities on the floodplain more sustainable will be to make buildings more resilient to flooding. In general, incorporating resilience and resistance should ensure that properties recover more quickly than they would otherwise following a flood event, helping to minimise time out of the building for owners, stress and health problems, and repair costs. In the case of isolated or small rural communities, which are unlikely to benefit from a community scheme, building resilience or resistance may represent a key tool for managing their risk.

5.5 The Government will seek to promote the incorporation of appropriate flood resilience and resistance measures in both new and existing buildings. We recognise that they are just one of a number of tools, and that their use may not be appropriate in all circumstances. They should supplement, but not replace, land-use planning arrangements.

New buildings

5.6 In terms of new build, we will look to complete ongoing research and to incorporate the results in updated Building Regulations by 2009. The objective is to ensure that new buildings on the floodplain are appropriately flood resilient. Guidance to accompany this change will also be produced. In addition, the Code for Sustainable Buildings[9] will address, whenever appropriate, flood resilience and resistance issues.

Existing buildings

5.7 The Government recognises that the vast majority of buildings on the floodplain already exist, and there is currently little incentive for property owners to make these buildings more resilient. While many will be protected by community schemes and/or flood warning, there will be a number of vulnerable properties on the floodplain where the provision of a flood alleviation scheme is very difficult. In the light of this, and taking into account the principles of sustainable development and social justice, the Government will carry out a feasibility study to consider

[9] www.odpm.gov.uk/stellent/groups/odpm_about/documents/page/odpm_about_034076.hcsp

whether it is practicable to provide Government financial support for making any of these properties more flood resilient/resistant. This study will consider a number of issues including the scope of any scheme, effectiveness, eligibility, the legal basis, the degree of incentivisation and the cost. Following the outcome of this study, a pilot grant scheme will be developed. The study and pilot will also consider other approaches to encouraging the uptake of resilience measures and the availability of suitable advice, which is covered in more detail below.

Advice and information

5.8 The availability of quality advice and information on flood resilience and resistance will be an important component in incentivising individuals to incorporate flood resilience and resistance into their properties and to engage with builders and surveyors to this end.

5.9 Concerns have been expressed about the quality of advice currently available from surveyors and other building experts in this area. Defra and the Environment Agency will explore with the appropriate professional and industry bodies how the availability of professional advice can be improved. We will also consider how flood risk might be better incorporated into the activities of building contractors generally. Work on this will be carried out as part of the feasibility study mentioned above, and should be completed by the end of 2007.

5.10 The Environment Agency's website will continue to act as a focal point for published advice, guidance and research on resilience and flood protection products, and will be updated as significant new information becomes available.

Chapter 6

Rural land use, land management and managed realignment

A wider portfolio of responses

6.1 A large majority of consultees agreed that, in managing flood and coastal erosion risk, we should move to a wider portfolio of responses which includes greater use of rural land use solutions such as the creation of wetlands and washlands, coastal realignment, river corridor widening and river restoration.

6.2 We will therefore pursue this strategic approach as set out in *Making space for water*. In line with this, the Environment Agency has now established national minimum targets for wetland habitat creation so as to ensure that flood management and coastal protection solutions are consistent with biodiversity needs.

Managed realignment

6.3 Most consultees fully support managed realignment, both on coasts and rivers, provided it is well planned. However, concerns were expressed by representatives of landowners about withdrawal from defences that protect agricultural land. A number of responses suggested that funding mechanisms were not adequate fully to facilitate managed realignment. There were also strong concerns about permanent loss of properties on the coast due to erosion.

6.4 In the light of responses to the consultation, the Government will continue with its policy of providing funding for the maintenance of existing defences only where the costs are justified by the full range of benefits provided by the defences. Costs and benefits will, however, be measured in a more holistic way that takes better account of environmental and social, as well as economic, considerations. We will put in place clear exit strategies to ensure that withdrawal of funding is well planned and takes account of all the consequences.

6.5 Where land and property is needed for works associated with managed realignment under a flood management scheme, the Government will continue to provide the finance for this. We envisage that the number of such realignment schemes, and therefore their share of the risk management budget, will increase as part of our increasing use of the portfolio approach – see paragraphs 6.1 and 6.2 above. The Government will continue to use land-purchase where compensation habitat is required under the Habitats Regulations. We will also continue to make maximum use of economic incentives to landowners through agri-environment schemes.

6.6 Specific issues arising from realignment on the coast are dealt with in chapter 8 below.

Protecting environmental assets

6.7 Flooding can be either beneficial or harmful to sites of designated environmental importance, such as SSSIs, Natura 2000 sites and Scheduled Ancient Monuments. The frequency and duration of flooding to these assets will be considered and appropriate measures taken. For example,

some coastal freshwater wetland sites may need to be protected from frequent, prolonged tidal inundation, but can withstand occasional inundation of short duration. In other circumstances, where any form of protection is deemed to be unsustainable, or where flooding would not be detrimental to the assets (for example, some archaeological sites) it may be better not to protect such sites at all. In the case of Natura 2000 sites, where a decision is taken to remove a defence, there is a legal requirement to replace the affected habitats. English Nature will advise, on a case by case basis, what flood management measures are necessary for a particular designated site. Sites of designated environmental importance will usually also have other benefits, for example recreational and/or property interests, which will also be considered in deciding on the management action. Operating authorities will increase their awareness of such assets and will incorporate appropriate measures in their programmes, including habitat creation programmes.

Water Level Management Plans

6.8 In the responses to the *Making space for water* consultation, there was strong support for the use of Water Level Management Plans to assist in bringing Sites of Special Scientific Interest into favourable condition.

6.9 The Government has recently announced an increase to 100 per cent grant rate to Internal Drainage Boards for priority Sites of Special Scientific Interest. This will make an important contribution to bringing such sites into favourable condition.

Rural land management

6.10 Most consultees considered rural land management practices (such as cultivation practice and woodland creation) to be capable of ameliorating run-off and reducing the incidence of flooding on a *local* scale. The Government will therefore continue to employ the means identified in *Making space for water* for promoting such changes. These relate to taking maximum advantage from the status of flood management as a secondary objective in the Environmental Stewardship[10] scheme, and to the potential benefits for the control of water run-off from soils under the new Single Payment arrangements of the reformed Common Agricultural Policy. As envisaged in *Making space for water*, we will also – where appropriate – include encouragement of extensive land management techniques as part of the integrated drainage management pilots we will be undertaking as outlined later in this document (chapter 7).

6.11 We will be giving priority to further research into the role rural land management techniques might play in managing flood risk at *catchment* level. This was an area where the *Making space for water* consultation identified a gap in the current evidence base.

[10] www.defra.gov.uk/erdp/schemes/es/hls.htm

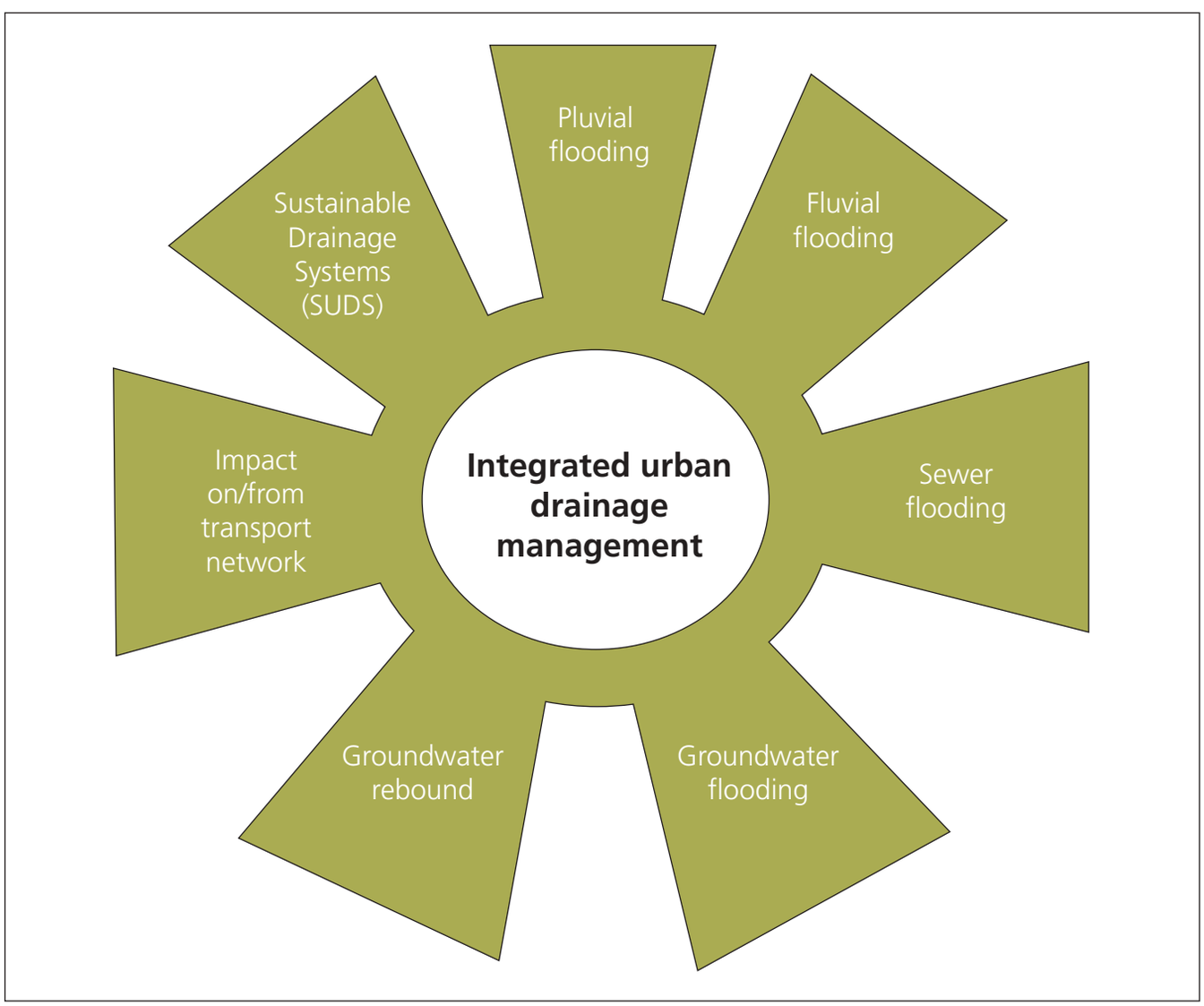
Integrated urban drainage management

7.1 In *Making space for water* the Government proposed that a joined-up approach to drainage management should be pursued in high-risk urban areas. This would involve a joined-up approach across fluvial flooding, pluvial flooding, sewer flooding and groundwater flooding. *Making space for water* also sought views on how the Government might best facilitate this.

7.2 The joined-up approach to integrated urban drainage management was strongly supported by respondents to the consultation exercise.

7.3 The Government therefore proposes to take forward the concept of integrated urban drainage management. Figure 1 illustrates the main components of this concept.

Figure 1: Integrated urban drainage management



7.4 In practice this means enabling the different authorities responsible for different parts of the drainage system in urban areas to work together to assess and manage flood risks, taking a long-term and strategic approach. These could include local authorities, highways authorities, water companies, the Environment Agency, those responsible for Sustainable Drainage Systems and others. The precise mix of responsibilities will be different in each urban area. As explained in *Making space for water,* enabling such partnerships has the potential to provide integrated catchment benefits for urban areas (improving flood risk, water quality and water resources management), and would provide much-needed clarity in roles and responsibilities for the public.

7.5 There was strong support in responses to *Making space for water* for proactive Government intervention to ensure that better integrated urban drainage management is achieved, rather then relying on voluntary measures and guidance alone. There was clear support for some kind of requirement for the different organisations to work together and share information in specific high-risk urban areas. Types of activity could include working together to develop compatible Geographical Information Systems (GIS) so as to support more comprehensive analysis and understanding of urban drainage system performance.

7.6 The Government takes note of the views put forward in responses. So as to take forward thinking on future arrangements Defra will review ongoing best practice and pilot a range of different approaches to developing more integrated management of urban drainage. The proposal for such pilots in *Making space for water* received widespread support. Work will start in summer 2006. The best practice review will look at emerging findings and lessons learned from several ongoing voluntary approaches, including the Birmingham SMURF[11] project, and the proposals for integrating storm and surface water management planning in the AUDACIOUS Project[12].

7.7 Urban flood risk will not be considered in isolation. Activity in the catchments upstream of urban areas can be a significant factor in urban flood risk. In that respect we will examine the lessons to be drawn from the Marston Vale Surface Waters Group project[13] and any similar work.

7.8 These pilots will fill in gaps in our knowledge and explore a full range of different approaches, led by different types of organisations in different types of urban environment. The Government will consider the findings with a view to taking decisions on further action to enable integration of drainage management.

7.9 The Environment Agency will work towards taking a strategic overview across all types of flood risk in urban areas. Subject to the results of the review and the pilots mentioned above, it is, however, envisaged that a decision could be taken on a case-by-case basis about which organisation might take the lead in detailed work on integrated drainage management in any specific urban location. It will be important to prioritise action so as to deal with areas where the risks are highest, and to adopt a flexible approach that delivers practical, effective and streamlined solutions.

[11] Sustainable Management of Urban Rivers and Floodplains (www.smurf-project.info/index.html)

[12] EPSRC-funded Audacious Project, www.eng.brad.ac.uk/audacious

[13] The Surface Waters Plan, Bedfordshire and River Ivel Internal Drainage Board and The Forest of Marston Vale, June 2002.

Sustainable drainage systems

7.10 The Government is committed to ensuring that take-up of Sustainable Drainage Systems (SUDS) techniques is facilitated where appropriate.

7.11 Responses to *Making space for water* show that action is needed to provide clarity on a range of issues associated with facilitating SUDS. It is also apparent that a *one-size-fits-all* approach is not appropriate. The term 'SUDS' covers a broad and complex range of different drainage solutions by different organisations in different areas.

7.12 The Government recognises that action is needed to resolve outstanding issues. We will develop appropriate solutions in partnership with others and in the context of taking forward integrated drainage management. In particular, Defra acknowledges the valuable work of the National SUDS Working Group[14] to date, and we will continue to work with the Group, building on what has been achieved so far. We recognise the need to address key issues associated with SUDS including:

- how to ensure that SUDS are given equal consideration to traditional drainage solutions as appropriate;
- how to ensure relevant codes of practice are followed as far as possible; and
- how to ensure that adoption, ownership and operational responsibility enable continued functionality.

7.13 The concerns raised and suggestions made in responses to the *Making space for water* consultation are described in detail in a separate background paper: *Sustainable Drainage Systems*[15]. These concerns will form the basis of a programme of further work to be completed by spring 2006.

Sewer flooding

7.14 Reducing the distress of sewer flooding remains a priority for Government as set out in the guidance on Government policy provided to Ofwat during its recent price review[16]. The Government welcomes the attention paid by water companies and Ofwat to sewer flooding in this review. It is the Government's view that as many properties as possible should be protected while also ensuring that the costs to customers more widely are proportionate to the benefits.

7.15 In their final price determinations Ofwat have assumed companies will spend a total of £970 million to address the problem of sewer flooding. Ofwat expect this provision to resolve 9,210 new and emerging internal flooding problems and 6,030 external problems caused by lack of sewerage capacity. Ofwat have also made provision for mitigation actions at 4,660 properties to reduce the impact of flooding where a capital scheme is not considered cost beneficial or is not planned in the near future. Ofwat is expecting that, as a result, companies by 2010 will be able to tackle all the known high risk problems of internal flooding due to lack of capacity that the companies proposed to solve when they produced their final business plans. Ofwat also

[14] Interim Code of Practice for SUDS, July 2004, National SUDS Working Group. www.ciria.org.uk/suds/icop.htm

[15] Available at www.defra.gov.uk/environ/fcd/policy/strategy/techdocs.htm

[16] www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/Content/pr04index

expects companies to have dealt with most newly emerging problems. Ofwat accordingly estimates that by 2010 the properties still at risk will primarily be those where the costs of action outweigh the benefits, or where there have been newly emerging problems that have not yet been solved. Around 3,100 or 0.01 per cent of properties will be at risk of internal flooding at least once in ten years compared with about 8,800 in 2004/05.

7.16 Ofwat are continuing their discussion with sewerage undertakers and Government on compensation, insurance and mitigation measures related to sewer flooding. Ofwat hosted a second seminar on the subject in February 2005, and will be consulting on the way forward later in 2005.

Private sewers

7.17 The Government published a response in October 2004[17] to its original consultation exercise on private sewers. Ninety-five per cent of respondents stated that current arrangements for private sewers are unsatisfactory and that changes are needed to address the associated problems. A transfer of ownership to sewerage undertakers was favoured by the majority of respondents as the comprehensive solution. The Government has therefore undertaken to examine this particular option in more depth. Further work on how such a transfer might be implemented, particularly its scope and form together with some qualitative customer research, is necessary before a decision is made on the way forward. The Government proposes to publish a decision paper and accompanying Regulatory Impact Assessment in the summer, but does not rule out the need for further consultation on how a potential transfer might best be implemented.

Role of the transport network

7.18 Most respondents to *Making space for water* recognised the role that the transport network has in flood risk management – in relation both to event mitigation and the impact of flooding on the network. The role extends to both urban and rural situations.

7.19 The majority view was that the *Design Manual for Roads and Bridges*[18] is useful, although there were some suggested areas for improvement.

7.20 There was general consensus that guidance on the design and maintenance of non-strategic roads should be produced, but there were different views as to its precise format.

7.21 There was again general consensus that the urban road network should be covered in plans for integrated drainage. However, respondents noted that the network's role in event mitigation needed a careful balance between public safety and other issues. Inundated highway drains could, for example, cause problems for the sewerage network.

7.22 The Government recognises that when considering the issue of urban flooding, it is important that the transport network is included. There are, for example, links with the drainage operations of the sewerage companies. The proposed pilots on integrated drainage management will include consideration of highway drainage in particular and the transport network generally.

[17] Available at www.defra.gov.uk/corporate/consult/sewers/index.htm

[18] Available on the Highways Agency website via www.highways.gov.uk/business/tech_info.htm

7.23 The Department for Transport (DfT) is looking at how the transport network might adapt to future changes in the climate, including flooding. DfT consultants produced a report on this subject in April 2004[19] and DfT has subsequently held workshops bringing together key players. DfT will also be bringing out a leaflet highlighting the implications of the Foresight *Future Flooding* report for transport practitioners.

7.24 The Highways Agency, which is responsible for strategic roads, has a rolling programme of updates to its *Design Manual for Roads and Bridges*. The Agency will, by 2006, review the guidance and consider how to take it forward in light of the responses made to the consultation and especially in relation to the gaps identified, many of which are already being addressed in the current programme of update. Where appropriate an update will be produced by 2008.

7.25 Non-strategic roads have different maintenance requirements to strategic roads, and their drainage, if any, was rarely designed to modern standards. The Government recognises that poorly designed or maintained drainage systems on non-strategic roads can contribute to the flood risk in urban areas. The UK Roads Board is already working with the Office of the Deputy Prime Minister and DfT on a new *Manual for Streets*, which is one of the actions from *Better Streets, Better Places*[20] published in July 2003. This is intended to be published in February 2006. Guidance on maintaining drainage is also being included in the revision of *Delivering Best Value in Highway Maintenance*[21] to be published by the UK Roads Board in summer 2005, which will also be kept updated to take account of flood risk.

7.26 The transport network, and in particular the road network, should be considered as part of the emergency planning process for extreme events. This includes awareness of emergency access requirements, resilience of infrastructure, and the consideration that initial inundation of public open spaces, car parks and non-major roads should, where possible, be used to dissipate flooding before more vulnerable residential or commercial property is affected.

7.27 In relation to major transport infrastructure generally, where flood risk is a factor in design or operation, an appropriate level of dialogue should be maintained between designers and developers, infrastructure operators, including sewerage companies, and the flood risk management operating authorities.

Groundwater rebound and groundwater flooding

7.28 The *Making space for water* consultation confirmed the desire for national co-ordination of groundwater flooding risk management within the overall flood and coastal erosion risk management framework. Groundwater flooding can affect both urban and rural localities.

7.29 There was support for further research into the scale of the risk from different types of groundwater flooding, together with better, consistent record-keeping of incidents. Further work is needed to consider whether a national database is appropriate given that groundwater flooding is specific to some areas of England in particular. Concerns were raised about the practicality of carrying out major engineering solutions to mitigating groundwater flooding and groundwater levels.

[19] The Changing Climate: Impact on DfT, available at www.dft.gov.uk/strategy/climatechangeimpacts/dftreport

[20] www.odpm.gov.uk/stellent/groups/odpm_planning/documents/page/odpm_plan_023006.hcsp

[21] Published 2001. Available in print from The Institution of Highways and Transportation (ISDN: 0902933 37X). A revised version of the document will also be available online in summer 2005 at www.iht.org.uk

7.30 The Environment Agency will, from spring 2006, assume a strategic overview for monitoring groundwater flooding as part of its wider strategic role in the new flood risk management framework. The extent of this role and the legislative details will be clarified by further work, in consultation with strategic stakeholders and consistent with the integrated urban drainage management approach set out above. The work will be completed during 2005/06 if possible.

7.31 Priorities for further research identified in the Defra *Groundwater Flooding Scoping Study*[22] and in responses to the consultation exercise will be reviewed by the end of 2005 and will be taken forward within available funding.

7.32 As part of their strategic overview role, the Environment Agency will work towards the better collation of records, and better assessment and monitoring of problems associated with groundwater flooding. The Environment Agency will consider how best to incorporate risk information into their flood risk mapping strategy in order to improve awareness and understanding, particularly for the public at risk, land-use planners and developers. This will enable a proactive approach to managing the risks, including for new development.

7.33 Management of risks from man-made groundwater rebound (for example, from former mining areas and former industrial extraction in urban areas) will continue to be through voluntary co-operation between parties in the affected area. The GARDIT[23] approach in London is a good practice example.

7.34 In the case of natural groundwater flooding, the Environment Agency will co-ordinate any management measures as appropriate in the context of their framework for assessing, prioritising and managing flood risks. This framework will recognise the need to take account of the environmental objectives for groundwater under the Water Framework Directive, and of existing and forthcoming European legislation concerning groundwater. There are limitations on the practicality or desirability of undertaking large-scale engineering solutions for the mitigation of natural groundwater flooding. We will seek to make these more widely understood so as to manage the expectations of those at risk.

7.35 The Environment Agency will continue to provide the existing warning service for groundwater flooding. They will investigate extending the coverage and level of service where this is technically and economically feasible and dependent on resources available (paragraph 9.8).

[22] www.defra.gov.uk/environ/fcd/policy/strategy/techdocs.htm

[23] The General Aquifer Research, Development and Investigation Team (GARDIT) is responsible for investigating means of bringing groundwater levels under control in London. The team includes Thames Water utilities, the Environment Agency and the Association of British Insurers.

Chapter 8

Living with the changing coast

8.1 In *Making space for water* the Government sought views on coastal flooding and erosion management arrangements, in particular the current mix of roles and responsibilities and strategic planning mechanisms on the coast. There was some appetite for change from the respondents to the consultation exercise, recognising the need to develop a more strategic and integrated approach to managing coastal flooding and erosion risks in a way which maintains democratic input to decision-making processes.

8.2 The Government therefore wishes to work towards a more joined-up approach to sustainable coastal flood and erosion risk management in England.

8.3 The Government proposes to review current legislative and institutional arrangements with a view to enabling the Environment Agency to take a holistic and strategic role in relation to all coastal flood and erosion risk management issues in England at some point in the future. This review could include consideration of amending the Coast Protection Act 1949. We hope to complete the review by spring 2006.

8.4 The details of the Environment Agency's proposed strategic role will need to be developed through future consultation as appropriate. The role could include a joined-up approach to assessing and prioritising flooding and erosion risks on the coast and delegation of some current Defra functions, for example for scheme approvals. Appropriate transitional arrangements will also need to be agreed. The timeline for achieving this will be developed as part of a programme of further work, subject to the outcomes of the work below.

8.5 The precise roles and responsibilities of maritime local authorities in decision-making and delivery will need to be decided and will be the subject of further work and consultation during 2005/06 and possibly beyond.

8.6 There would be a need to ensure democratic input into decision-making in terms of how the Environment Agency exercises its functions at the regional level. The Government proposes to explore different models for achieving this, which will be the subject of further consultation in the future. The models will include possible roles for current coastal groups and their relationship to existing Regional Flood Defence Committees. We hope to complete this work by the end of 2007.

8.7 The Government will continue to develop guidance and seek best practice on appropriate stakeholder engagement at all levels of coastal decision-making.

8.8 The Government looks to improve awareness and education of coastal flood and erosion risks, including work towards provision of comprehensive and accessible risk maps which include coastal erosion by 2008 (see paragraph 3.4 and chapter 9).

8.9 Under the scenario above there should be increased clarity of responsibilities for the public and a reduction in the current mixed messages from different organisations with responsibility for coastal issues.

8.10 The Government is not proposing at present to review the current non-statutory basis of Shoreline Management Plans. Other ongoing policy developments may help support the status of Plans in the future.

- The forthcoming second-generation Plan development process.
- The relationship to Regional Spatial Strategies, which should take account of Plans.
- The relationship to future River Basin Management Plans under the Water Framework Directive.

8.11 A number of the responses to *Making space for water* suggested that new tools were needed to help coastal communities adapt to a changing coastline. The issue also arose at the workshops and conferences held during the consultation period. It was argued that measures to help relocation or adaptation where defences could not be provided would promote social justice and community confidence: that they could play a role in ensuring Shoreline Management Plans were agreed by the relevant authorities and were actioned on the ground; and, that in some cases, they could facilitate environmental and biodiversity benefits.

8.12 Whilst noting the points that have been made, the Government is also conscious of a gap in the evidence base in this area. That gap will need to be filled to allow a rational consideration of the issues. More evidence is particularly needed to allow a meaningful comparison between the potential benefits and possible measures identified during the consultation exercise and the costs of implementing them, including any costs from precedents created in other areas and from risk reduction measures that might have to be foregone. Work is also needed on what the options for change might be in the context of permissive powers.

8.13 The Government will therefore take forward work to improve the evidence base and to investigate the practical implications of considering a wider portfolio of coastal erosion risk management tools. We hope to complete this work in 2006/07. It is really not possible to give any commitments at this stage as to whether this will lead to future changes in policy.

8.14 This direction of travel is consistent with the principles of Integrated Coastal Zone Management (ICZM) and can be linked to wider coastal and marine activities through the forthcoming national ICZM Strategy.

Chapter 9

Living with flood risk

Improving awareness and education

9.1 Information on flood risk was generally seen by respondents to *Making space for water* as being widely available and continuously improving in quality. The Environment Agency's flood maps and its flood warning service were generally found to be useful. There is a fairly wide consensus on the need to raise awareness and preparation within communities for the changing flood and erosion risks resulting from climate change. Community partnerships were seen as very effective, and their wider development would be welcomed. Opportunities to educate the next generation about flood and erosion risks were also seen as important.

9.2 In carrying forward the new strategy we will:

- pilot and evaluate different models for integrated long-term community awareness management spanning the different streams of community and stakeholder engagement arising from flood and coastal erosion programmes, strategies and schemes. This will include consideration of developing Local Community Action partnerships;
- exploit the full potential of new techniques for visualisation and demonstration of alternative futures to involve stakeholders effectively in understanding and contributing to the debate on realistic alternatives for future risk management;
- encourage the development of community education tools through local partnerships. Hampshire Flood Forum has, for example, developed a DVD educational video in conjunction with Hampshire County Council, the Environment Agency and Southern Water. The DVD presents the facts about local flood risk in a way that is relevant to the community, being interesting and informative to get the message across, and makes use of advances in technology now commonly available in schools and the home;
- work with the Office of the Deputy Prime Minister and other interested bodies on the development of Home Information Packs[24] and the inclusion of flood risk as a standard search;
- explore how integrated flood and erosion risk information could be incorporated as part of the Environment Agency's website with links to live flood warning pages and rainfall/river/tidal level forecasts. We will explore making this information more widely available to specific groups or individuals who do not have access to the internet or other communication technology by using community networks, public buildings and local voluntary organisations;
- work with other government departments to develop education tools addressing the issues surrounding flooding and coastal erosion; and
- encourage non-governmental organisations and a variety of other bodies to assist in promoting information and awareness-raising initiatives, and in developing and providing more active community involvement.

[24] Further information on Home Information Packs can be found at www.odpm.gov.uk/stellent/groups/odpm_housing/documents/page/odpm_house_026060.hcsp

Chapter 9

Flood warning systems

9.3 The majority of responses concurred with the Government's view that flood warning is an important risk management tool. Most also felt that the Government should undertake a review of whether greater account should be taken of the availability of flood warning services when appraising schemes. There were mixed views about the effectiveness of current warning services – most felt they were effective for coastal and fluvial events but less so against other forms of flooding including flash floods. It was also noted that effectiveness is also dependent on action being taken.

9.4 Taking these views into account, the Government will continue to extend and develop the existing flood warning service as a high priority through the Flood Warning Investment Strategy agreed by the Environment Agency and Defra in 2004. This is in recognition that flood warning is an important tool in minimising risk to life and property from flooding.

9.5 The Environment Agency will maintain its work to develop the most effective delivery mechanisms for warnings, to increase coverage, reliability and accuracy, and to ensure that those receiving warnings have the appropriate warning and in sufficient time to take effective action. Addressing concerns regarding effective dissemination, the Agency is introducing a new state-of-the-art multimedia warning system in 2005/06 which will represent a significant technological advance and further improve the broadcasting of flood warnings to the public and emergency services.

9.6 The Environment Agency will also work with leading science experts to further develop the extent, range and accuracy of modelling and forecasting to provide more targeted warnings to communities and individuals. Further consideration will also be given to how to encourage communities to act upon warnings given.

9.7 Defra will work with the Environment Agency to review whether greater account should be taken of the availability of flood warning services in scheme appraisals and prioritisation. This will include reviewing whether greater priority should be given to schemes where flood warning is not feasible.

9.8 Flood warning currently focuses on flooding from the coast and rivers. However, in line with the holistic approach to flood risk management outlined in this response, Defra will work with the Environment Agency and other relevant bodies to explore the feasibility of developing warning services for urban drainage and sewers and extending that which is available for groundwater. We will also ask the Environment Agency, in partnership with the Met Office, to examine the practicality of providing warnings to the public for extreme flood events resulting from exceptional weather or other environmental conditions.

Emergency responses

9.9 While no questions were asked in relation to emergency response, a number of respondents noted the importance of this area.

9.10 The Government recognises that it is not possible to protect everyone, everywhere against every flooding eventuality. Extreme or unpredictable events can happen. While physical defences may provide a level of protection they may be breached or overtopped. So a necessary component of flood defence is a flood warning system, backed up by civil protection measures. The crucial role of the Environment Agency is to give as much forewarning as possible of events, not only to the public but also local authorities and emergency services.

The role of planning

9.11 Government, local and central, have long had contingency plans to deal with potential and actual floods. These plans are regularly exercised in simulations at the local level; and, of course, for real in flood events. Recent examples of plans having been activated were in Boscastle in August 2004 and Carlisle in January 2005. Both these events were triggered by extreme weather. Floods are fast moving events which require rapid responses and decisions must be taken at levels closest to events.

9.12 In the light of recent events, the Environment Agency will be compiling a register of catchments where the potential speed, depth and velocity of flooding would cause extreme risk to life. The Agency will then review and adjust its policies, processes and flood awareness information to ensure they are appropriate in those areas. It is expected that the criteria for identifying those catchments will be selected by summer 2005, with application of the criteria and completion of the register following in subsequent months.

9.13 Plans at all levels from the local to the national were exercised in summer 2004 when the Environment Agency led an exercise, with the participation of around 1,000 people in total from professional organisations, to test resilience to a national scale simulated flooding event. Exercise Triton assumed a major coastal flood along parts of the East coast of England from Lincolnshire round to Hampshire, with offsets in Gwent and North Wales. The Lessons Identified report, including input from partners at all levels, will be published in spring 2005 and an action plan to implement its recommendations, and taking into account lessons also identified from the floods in Boscastle and Carlisle, will be put in place.

9.14 The Government attaches considerable importance to emergency response and is committed to ongoing evaluation, review and improvement of existing plans and procedures in the light of lessons identified from regular exercises and actual floods.

9.15 Defra and the Environment Agency will help to continually improve the capability at all levels first to anticipate flood events and then, through their input to contingency planning at all levels, to help all services and departments/agencies to respond to them when they occur.

9.16 For instance, as a result of Exercise Triton and the Boscastle and Carlisle floods, the Agency will be looking to improve its flood forecasting capability, to form as effective a support as possible to the flood warning system. The Agency will work with the Resilience Forums to identify risks and plan for them, for example through improvements to evacuation and recovery plans.

Defra will work closely with the Agency and other central government departments to facilitate this work.

9.17 This will be a cross-government activity, as major flooding events can have impacts across a wide range of sectors. Emphasis will be on minimising risks to life and property, through, for example, ensuring that evacuation procedures are adequate to the kinds of risks that a major flooding event may create. There will also be work on enhancing the capability of local communities to recover from flood events so as to get back to normal life as quickly as possible. Recovery is led by local authorities, with assistance from, for example, Regional Development Agencies and the central government-financed Bellwin scheme.

Civil Contingencies Act[25]

9.18 Exercise Triton also provided an opportunity to test the structures and procedures for civil protection drawn up under the Civil Contingencies Act, which came into force in November 2004. The Act formalises the duties on Category 1 responders[26] to emergencies by requiring risk assessment and contingency planning to deal with emergencies, and the giving of advice and information to the public about actual or likely emergencies, which is already a part of the Environment Agency's functions (for example through their flood warning system). Other partners locally, regionally and nationally have plans in place to provide resilience at their levels.

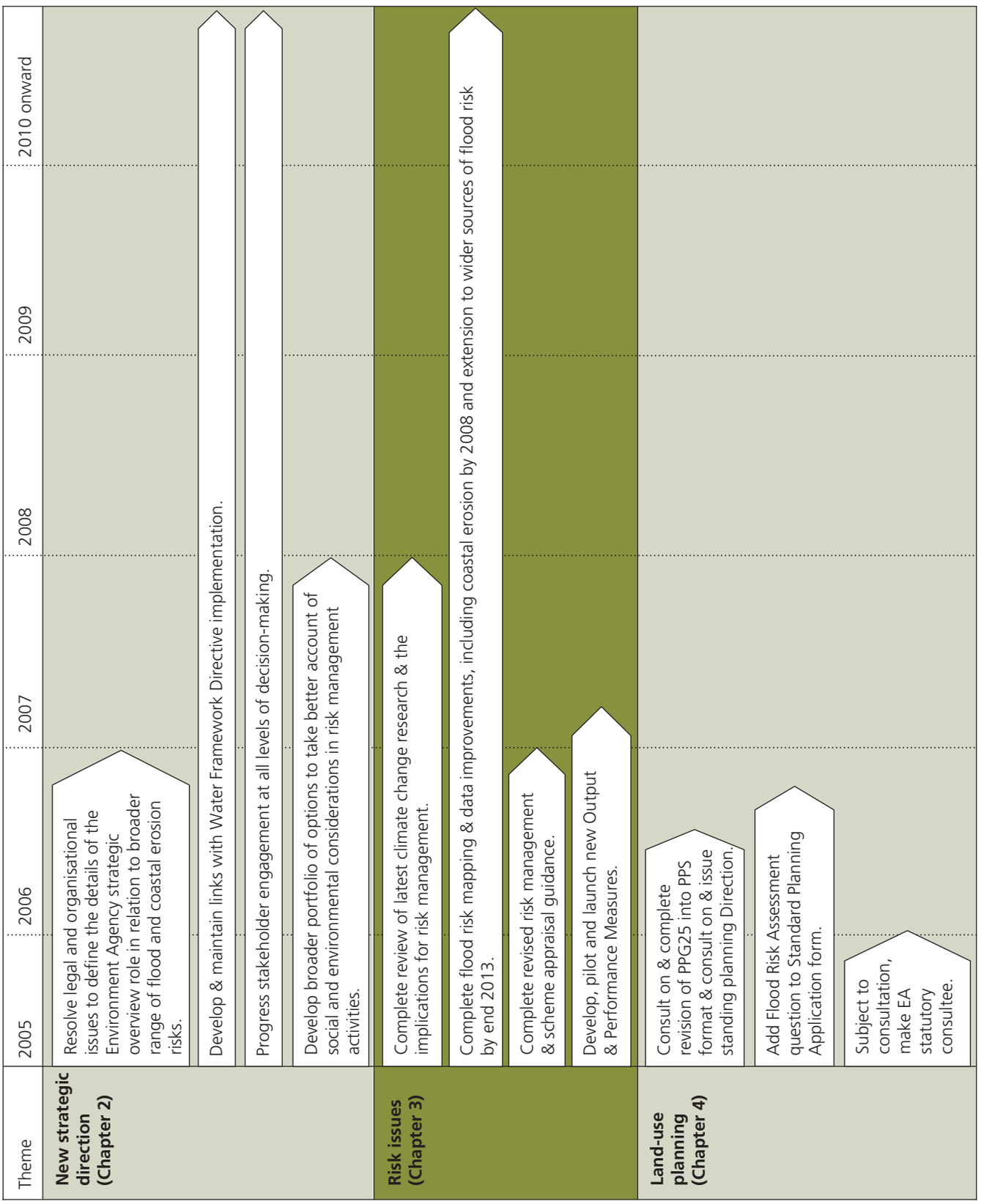
9.19 Under the Act, risk assessment and planning is arranged through the Local and Regional Resilience Forums. The Forums, which are led by the Regional Resilience Teams in the Government Offices of the Regions, seek to draw in all those bodies which may be exposed to risk or be required to respond to events, including flooding. The Teams also assist local authorities and emergency services in responding to and recovering from events. In doing so, they provide the point through which issues needing assistance from central government can be channelled.

9.20 Defra and the Environment Agency will work with the Government Offices Regional Resilience Teams and Local and Regional Resilience Forums to improve awareness of, planning for and capability for responding effectively to risks from flooding, including for the recovery phase. Defra and the Environment Agency will also work with other government departments including the Cabinet Office and the Office of the Deputy Prime Minister to assist others in central government to identify the national capabilities needed to assist local responders.

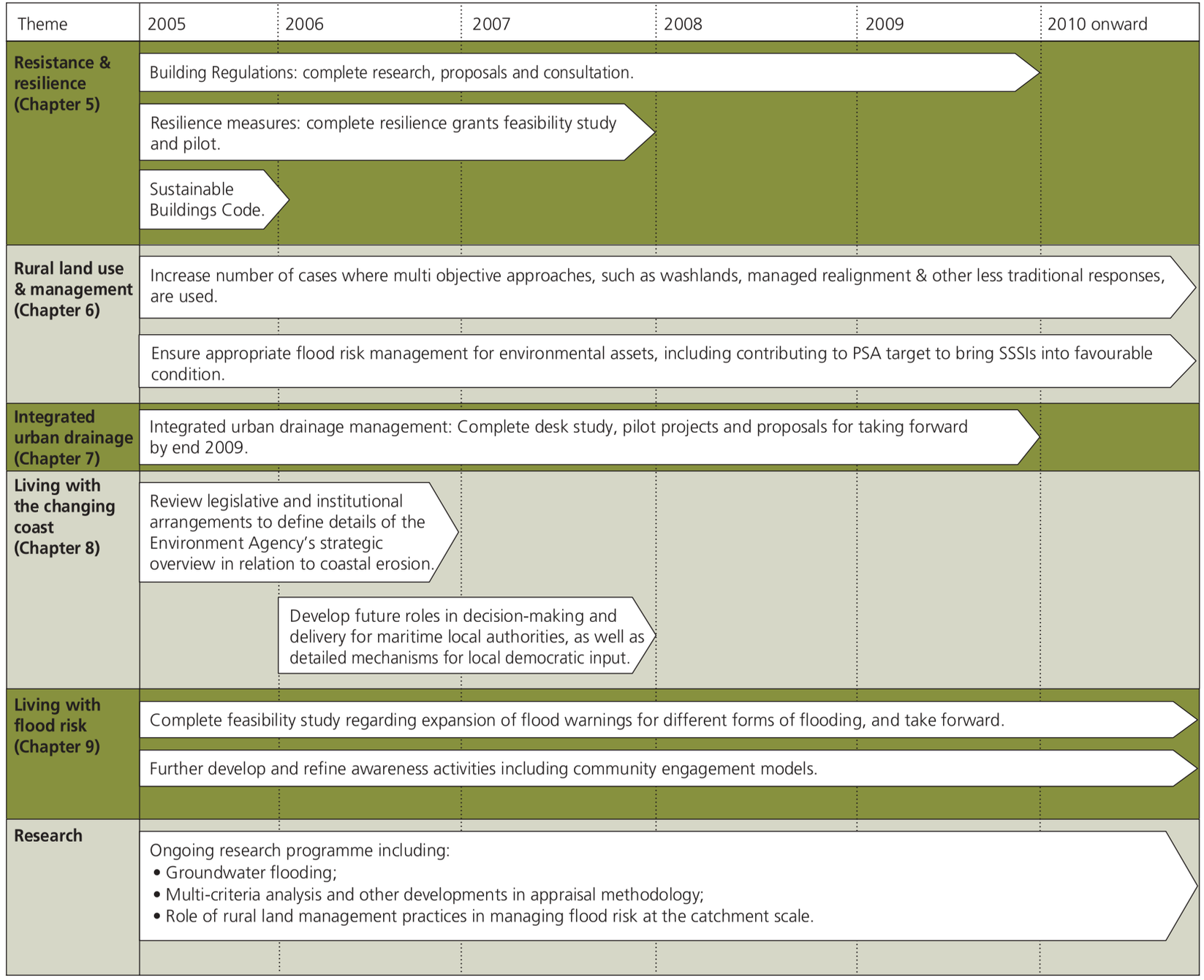
[25] Civil Contingencies Act 2004 – www.ukresilience.info/ccact/index.htm

[26] Includes the Environment Agency as well as local authorities and the emergency services.

Timeline of actions[27]



[27] Timeline setting out some of the key actions in this First Response document. A more detailed delivery plan will be published in summer 2005.


Theme
2005
2006
2007
2008
2009
2010 onward
Resistance & resilience (Chapter 5)
Building Regulations: complete research, proposals and consultation.
Resilience measures: complete resilience grants feasibility study and pilot.
Sustainable Buildings Code.
Rural land use & management (Chapter 6)
Increase number of cases where multi objective approaches, such as washlands, managed realignment & other less traditional responses, are used.
Ensure appropriate flood risk management for environmental assets, including contributing to PSA target to bring SSSIs into favourable condition.
Integrated urban drainage (Chapter 7)
Integrated urban drainage management: Complete desk study, pilot projects and proposals for taking forward by end 2009.
Living with the changing coast (Chapter 8)
Review legislative and institutional arrangements to define details of the Environment Agency's strategic overview in relation to coastal erosion.
Develop future roles in decision-making and delivery for maritime local authorities, as well as detailed mechanisms for local democratic input.
Living with flood risk (Chapter 9)
Complete feasibility study regarding expansion of flood warnings for different forms of flooding, and take forward.
Further develop and refine awareness activities including community engagement models.
Research
Ongoing research programme including:
• Groundwater flooding;
• Multi-criteria analysis and other developments in appraisal methodology;
• Role of rural land management practices in managing flood risk at the catchment scale.

Glossary

A

Agri-environment schemes
Designed to secure and buy additional environmental benefits from an agricultural industry in areas of market failure. They can secure environmental benefits at levels above those that are reasonable to demand through regulation or good farming practices. These schemes fit into a range of instruments available to the Government to help influence the management of the rural environment.

Appraisal
The process of defining objectives, examining options and weighing up the costs, benefits, risks and uncertainties before a decision is made.

B

Bellwin scheme
A financial support mechanism provided and administered by the Office of the Deputy Prime Minister (ODPM). This scheme is available to qualifying local authorities as a means of obtaining financial assistance in clearing up and recovery immediately after a local disaster or emergency.

Biodiversity
The total variety of life on earth. All genes, species, ecosystems and the ecological processes of which they are part.

C

Catchment Flood Management Plan
A large scale planning document that identifies long-term sustainable policies for the holistic management of flood risks in a defined river catchment or group of related catchments.

Civil Contingencies Act 2004
The Act, and its accompanying non-legislative measures, will deliver a single framework for civil protection in the UK.

Coast Protection Act 1949
An Act of Parliament that includes the current legal basis for permissive powers of Local Authorities to carry out Coast Protection Works to protect against erosion and encroachment by the sea.

Coastal defence
A term used to encompass both coastal protection against erosion and sea defence against flooding.

Coastal erosion
The loss of land or encroachment by the sea through a combination of wave attack and, in the case of coastal cliffs, slope processes (e.g. high groundwater levels). This may include cliff instability, where coastal processes result in the periodic reactivation of landslide systems or promote rock falls.

Coastal squeeze
The process by which coastal habitats and natural features are progressively lost or drowned, caught between coastal defences and rising sea levels.

Annex 2

Council of Environment Ministers
The Council of the European Union (often called just "the Council") is the main decision making body of the EU, and has the prime role (mainly now shared with the Parliament) in adopting legislation. The Council meets in specialist formats, such as Environment, attended by the relevant national Ministers. The presidency of the Council rotates every six months, and the presidency Member State chairs and determines the agenda for all Council meetings.

D

Design Manual for Roads and Bridges
Guidance provided by the Department for Transport covering procedures and standards to be adopted in the design and maintenance of major highways.

E

Environment Act 1995
An Act of Parliament that established the permissive powers and responsibilities of the Environment Agency regarding flood management.

Environmental Stewardship
Launched in 2005 to replace the agri-environment schemes, its aim is to encourage farmers and land managers across wide areas of land to deliver effective environmental management on their land.

Exercise Triton
A major national exercise to test national response and communication channels in a major simulated national scale flood event, carried out in the summer of 2004.

F

Flash floods
The result of intense and generally localised rainfall which significantly exceeds the capacity of natural and man-made drainage systems and therefore leads to excessive surface run-off. This run-off can cause localised but very severe flooding, and such events are very difficult to predict with any accuracy or useful lead time.

Flood alleviation schemes
Schemes designed to alleviate or reduce the risk of flooding to people and the built or natural environment. All publicly funded schemes are subject to formal appraisal, including cost/benefit analysis.

Flood probability maps
Environment Agency produced maps designed to show the predicted extent and probability of tidal and fluvial flooding.

Flood Risk Assessments
Assessments to determine the nature and extent of flood risk by analysing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat of harm to people, property, livelihoods and the environment on which they depend. Generally carried out in connection with development planning or specific proposals for new development.

Flood warning service
The process of alerting people in vulnerable areas to the risk of flooding.

Flooding
Refers to inundation by water whether this is caused by breaches, overtopping of banks or defences, inadequate or slow drainage of rainfall, underlying groundwater levels or blocked drains and sewers.

Floodplain
All land adjacent to a watercourse or coastline over which water flows, or would flow but for the presence of flood defences, in times of flood.

Fluvial flooding
Flooding that occurs as a result of high water levels in a river channel.

Foresight Future Flooding Report
An independent report commissioned by the Government Chief Scientist (Office of Science and Technology) and published in April 2004, that considered a range of scenarios for flood and coastal erosion risk management over the 21st century.

G

Groundwater flooding
Flooding caused when water levels in the ground rise up above the natural surface, it will often occur when accumulated rainfall over a long period of weeks or months is significantly above normal. Groundwater flooding is most likely to occur in low-lying areas underlain by permeable strata.

Groundwater rebound
The rise of groundwater levels in permeable strata from previous long-term lower levels, which were due to the abstraction of groundwater for public or industrial purposes, to the extent that there are now perceived risks to the built environment.

I

Integrated Coastal Zone Management (ICZM)
The process that brings together all those involved in the development, management and use of the coast within a framework that facilitates the integration of their interests and responsibilities. The objective is to establish sustainable levels of economic and social activity along the coast whilst protecting the coastal environment.

Internal Drainage Boards
Independent bodies created under statute to manage land drainage in areas of special drainage need. Established under the Land Drainage Act 1991, they have permissive powers to undertake work to secure drainage and water level management of their districts. Much of their work involves the improvement and maintenance of rivers, drainage channels and pumping stations.

L

Land Drainage Act 1991
An Act of Parliament that includes the current legal basis for permissive powers of Local Authorities and Drainage Boards to carry out flood management and land drainage works.

Local Development Frameworks
Planning procedures at the local level established in the Planning and Compulsory Purchase Act 2004 to implement Regional Spatial Strategies.

Annex 2

M

Managed Realignment of coasts and rivers
The management of a process of establishing a new flood defence line for river corridors or coastlines, often set back from the existing position, with the aim of improving the long-term sustainability of the defence, or contributing to other aims such as habitat creation.

N

National SUDS Working Group
A technical working group including representatives of the Water Industry, Environment Agency and other key stakeholders to coordinate and promote policies for the take-up of SUDS techniques.

O

OFWAT
The Office of Water Services is a non-ministerial government department, it is the economic regulator for the water and sewerage industry in England and Wales.

Operating authority
A body with statutory powers to undertake flood defence or coast protection activities, usually the Environment Agency, local authorities and internal drainage boards.

Overland flow
Surface movement of water derived from precipitation which is not intercepted by vegetation and which runs as a shallow unchannelled flow across the land surface.

P

Participation
The process whereby people and/or organisations take part in the decision making process.

Performance indicators
Representative measures of the outcomes from a particular programme of work that can be used to assess the degree to which the objectives of that programme have been achieved.

Pluvial flooding
Flooding caused by intense rainfall, often of short duration, that exceeds the capacity of the local drainage systems.

Private sewers
Sewers which are privately owned, and if become blocked are the responsibility of the property owner to clear.

R

Regional Flood Defence Committees
Executive committees of the Environment Agency that are required to take an interest in all flood matters in their area and in particular to take decisions about annual programmes of improvement and maintenance work to be carried out by the Agency.

Regional Resilience Teams
Teams set up in Government Offices for the Regions under arrangements to improve resilience by providing a focus for local planning and response for emergencies.

Regional Spatial Strategies
Development planning documents drawn up by regional planning bodies that aim to improve the quality of life, help deliver community aspirations and promote sustainable development.

Resilience measures
Resilience measures aim to reduce the consequence of flooding by, for example, facilitating the early recovery of buildings, infrastructure or other vulnerable sites following a flooding event or by ensuring that key infrastructure such as power distribution centres, telecommunication control centres and key emergency access routes have enhanced levels of protection or other mitigation measures.

Resistance measures
Resistance measures are designed to keep out, or at least minimise, the amount of water that enters a building, or other area of adverse impact, in times of flood.

River Basin Management Plans
Plans for the integrated management of whole body water systems, from areas of surface run-off through to estuaries and the sea. It is designed to provide a detailed account of the objectives that have been set for the water bodies within the river basin district, and explain how these are to be achieved. The Water Framework Directive places a duty on EU Member States to ensure that a comprehensive plan is produced, and updated every six years, for each river basin district.

S

Saltmarsh
An area of vegetation that is covered by sea water, and containing flowering plants that are adaptable to saline conditions and inundation.

Sewer flooding
Flooding due to failure or inadequate capacity of the man-made system which is designed to carry away flows of sewage and drainage water. OFWAT maintain a register of properties affected by sewer flooding with separate registers of those properties affected internally and externally.

Shoreline Management Plan (SMP)
A large-scale planning document which identifies policies for coastal defence management for a specified length of coast, normally a self contained sediment cell or group of cells, taking account of natural coastal processes and human and other environmental influences and needs.

Site of Special Scientific Interest (SSSI)
A site notified under the Wildlife and Countryside Act 1981 because it is of special interest by reason of the flora, fauna, geological or physiographical features.

Stakeholder
A person or organisation with an interest in, or affected by, the policies produced.

Sustainable Drainage Systems (SUDS)
A range of management practices, control structures and other facilities designed to accommodate the drainage of surface water from an area in a way that more closely resembles the runoff from a natural site. This is intended both to minimise downstream impacts of land use change on flood flow and make most effective and efficient use of the capacity of drainage systems whilst contributing to mitigation of pollution and other impacts.

Annex 2

U

UK Roads Board
An organisation set up in 2001 to bring together representatives of local and central government to contribute to the formulation of roads policy in the UK.

Urban drainage
Drainage systems in built up areas designed to remove surface water and sewage from buildings, roads and other developed areas. Generally consisting of underground pipe systems, pumps and controls with links to natural and man-made drainage channels and river systems.

W

Washland
An area of the floodplain that is allowed to flood or is deliberately flooded by a watercourse for flood management purposes.

Water Framework Directive
A directive of the European Community (2000/60/EC) which was transposed into UK law in 2003. Its aim is to improve the holistic management of the water environment (groundwaters, surface waters, estuaries and coastal waters) through a framework of River Basin Management Plans which include environmental objectives for all of the water bodies in the district, and programmes of measures designed to achieve those objectives.

Water Level Management Plan
A means by which the water level requirements for a range of activities in an area, including agriculture, flood defence and conservation, can be balanced and integrated. The plan outlines the objectives for the area and the means by which those objectives may be achieved.

Wetland
An area of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt including areas of marine water, the depth of which at low tide does not exceed 6m.

Annex 3

Further information

Further information about all aspects of flood and coastal erosion risk management policy in England is available via the Defra Flood Management website **www.defra.gov.uk/environ/fcd**.

A collection of background papers and technical documents that were developed to accompany the Making space for water consultation exercise are available from the Defra website via **www.defra.gov.uk/environ/fcd/policy/strategy/techdocs.htm**.

The Environment Agency homepage can be accessed via **www.environment-agency.gov.uk** and provides further information about managing flood risk, including flood warning and Floodline. The Environment Agency's Floodline number is 0845 988 1188.

The Office of the Deputy Prime Minister (ODPM) website provides details of planning guidance, housing policy, Building Regulations and other relevant issues via **www.odpm.gov.uk**

The National Flood Forum is an organisation set up to inform and bring communities together that are at risk of flooding. Further information can be found via their website at **www.floodforum.org.uk**

The Government's sustainable development website can be found at **www.sustainable-development.gov.uk**, where the sustainable development strategy *Securing the future* can be downloaded.

Hardcopy publications of this document (product code PB 10516); the Executive Summary of this Response (product code PB 10711); the consultation document (product code PB 9792); and a summary leaflet of the consultation (product code PB 9969) are available via Defra Publications, Admail 6000, London SW1A 2XX or via the Defra website.

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