

# managing flood risk

## South East Hampshire Catchment Flood Management Plan Draft Plan

July 2007

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# Foreword

## South East Hampshire Catchment Flood Management Plan

I am pleased to be able to introduce the South East Hampshire Catchment Flood Management Plan. Past flood events remind us of the hardship that flooding can cause, especially in the built environment. They also reveal the challenges we face when confronted by the forces of nature.

This plan will allow us to understand and describe how the catchment behaves and what the most sustainable flood risk management policies may be over the next 50 to 100 years. We can then use this direction to plan the most acceptable measures to manage flood risk for the long term.

When we have consulted on this document, we will use the catchment flood management plan to steer our future investment in flood risk management. We hope that our public and private partners will find it useful in their decision making, especially where it can guide the planning of land use

I look forward to receiving your comments so that we can produce a plan that will enable us to target our efforts and precious resources in the most beneficial way.



Tim Kermode                      Area Flood Risk Manager, Hampshire and IoW

***Please return comments on the draft CFMP report to Ian Walker (South East Hampshire CFMP Project Manager) at Environment Agency, Guildbourne House, Chatsworth Road, Worthing West Sussex BN11 1LD by 26<sup>th</sup> October 2007. email: [ian.s.walker@environment-agency.gov.uk](mailto:ian.s.walker@environment-agency.gov.uk).***

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# Executive summary

## Introduction

The social, economic and ecological risks from extreme flooding events need a long-term management approach. We need to maximise opportunities to work with nature in a way that is fair and that people can afford now and in the future. We may put control measures in place to manage flood risk, but these can fail or be overwhelmed by extreme flooding. These controls can also harm natural processes.

To manage flood risk over the next 50 to 100 years, we are responsible for developing a programme of Catchment Flood Management Plans (CFMPs). These aim to develop sustainable long-term flood risk management policies, which are long-term targets that we monitor and review. To develop CFMPs we need to work closely with other authorities, and maintain strong links with the wider planning framework.

This report presents the draft stage in developing the final CFMP. It aims to:

- assess the current flood risk and develop opportunities and constraints for management to identify the main issues and produce flood risk management objectives;
- use the objectives to assess how suitable flood risk management policies are for the catchment;
- assess how suitable policies would be under future scenarios of change within the catchment;
- consult with interested groups in the catchment involved in or affected by flood risk management.

We make the draft CFMP available to the public for comment and consultation before we issue the final plan. We distribute this draft report for consultation, hoping that feedback from our planning partners and others will help the draft CFMP to take on board other views on flood risk processes and impacts. We also hope that any feedback will help assess future change scenarios and their role in developing policies. We will develop the plan in the context of increasing risk from climate change and urban development.

## Catchment overview

This draft CFMP is for the combined catchments of the River Hamble, River Meon, Wallington River, River Alver, West Brook and Hermitage and Lavant Streams. The catchments are relatively flat and low-lying, mostly emerging from the permeable chalk downs to the north as seasonal streams. The rivers then flow over less permeable tertiary deposits before discharging into the international and national environmentally designated Southampton Water, Portsmouth Harbour, Langstone Harbour and Chichester Harbour. Urban development is greatest in the south of the catchment, with major conurbations between Portsmouth and Southampton along the route of the M27 road. The CFMP adjoins the North Solent Shoreline Management Plan to the South.

## Current flood risks and management

Causes of flooding are diverse and strongly influenced by the underlying geology. Groundwater flooding occurs in the areas that lie on chalk in the catchment, fluvial (river) flooding occurs in the areas that lie on tertiary deposits, and surface water flooding is an issue in the areas where natural drainage has been modified. The underlying geology has a strong influence on the characteristics of the flooding. Groundwater flooding is slow to emerge but lasts a long time, whilst fluvial and surface water flooding is more likely to happen as a result of individual storms. Consequently, it happens and passes quicker, and produces higher peak discharges.

The history of flooding in the catchment suggests that there are generally small numbers of properties flooded in a relatively large number of locations. However, particular exceptions to this include Wickham, Wallington, Hambledon, Rowlands Castle, and Portsmouth, where more than 20 properties have flooded in each place during a single flood event. The most significant flooding in recent times was during 2000/1 and this has been well documented.

The complex nature of flooding in the catchment means it is difficult to assess the potential damages. As an indication, flooding from fluvial out of bank flooding could cause £3 million worth of damages a year to residential and commercial property in the Wallington River catchment for an event expected every 100 years. Average damages from fluvial flooding within the catchment equal nearly £700,000 a year. Similarly, average damages from groundwater flooding in the chalk areas of the catchment are around £700,000 a year, with especially high costs associated with prolonged flooding from groundwater. It is difficult to estimate the damage caused by surface water flooding, as it is harder to predict when and where it may occur. As a general indication, approximately 2,000 properties are at risk of flooding from a 1% annual probability event in the CFMP catchment. We currently spend around £0.5 million per year on flood risk management.

## Future flood risk

The CFMP identifies flood risk management policies that will apply to the catchment for the next 50-100 years. Future changes within the catchment have been investigated with respect to climate change, increasing urbanisation and changes in land management and use. From investigations it is expected that:

- flood risk will increase in the catchments where out of bank river flooding or surface water drainage flooding occurs. Increased storminess will result in more runoff that drains faster;
- more properties can expect to be flooded more frequently because of the impact of climate change;
- climate change may not increase groundwater flooding, which relies on recharge of the chalk aquifer. Wetter winters but drier summers are not expected to significantly change the overall current groundwater situation;
- the pressure for urban development and limited space available means there will be significant development in existing urban areas. The existing drainage network will come under increasing pressure to cope with runoff;
- land use planning and development control will have a critical part to play in reducing the impact of flooding and the damages that result. This will particularly apply to new developments;
- land use changes in the rural catchment are not expected to significantly increase flood risk.

## Catchment objectives

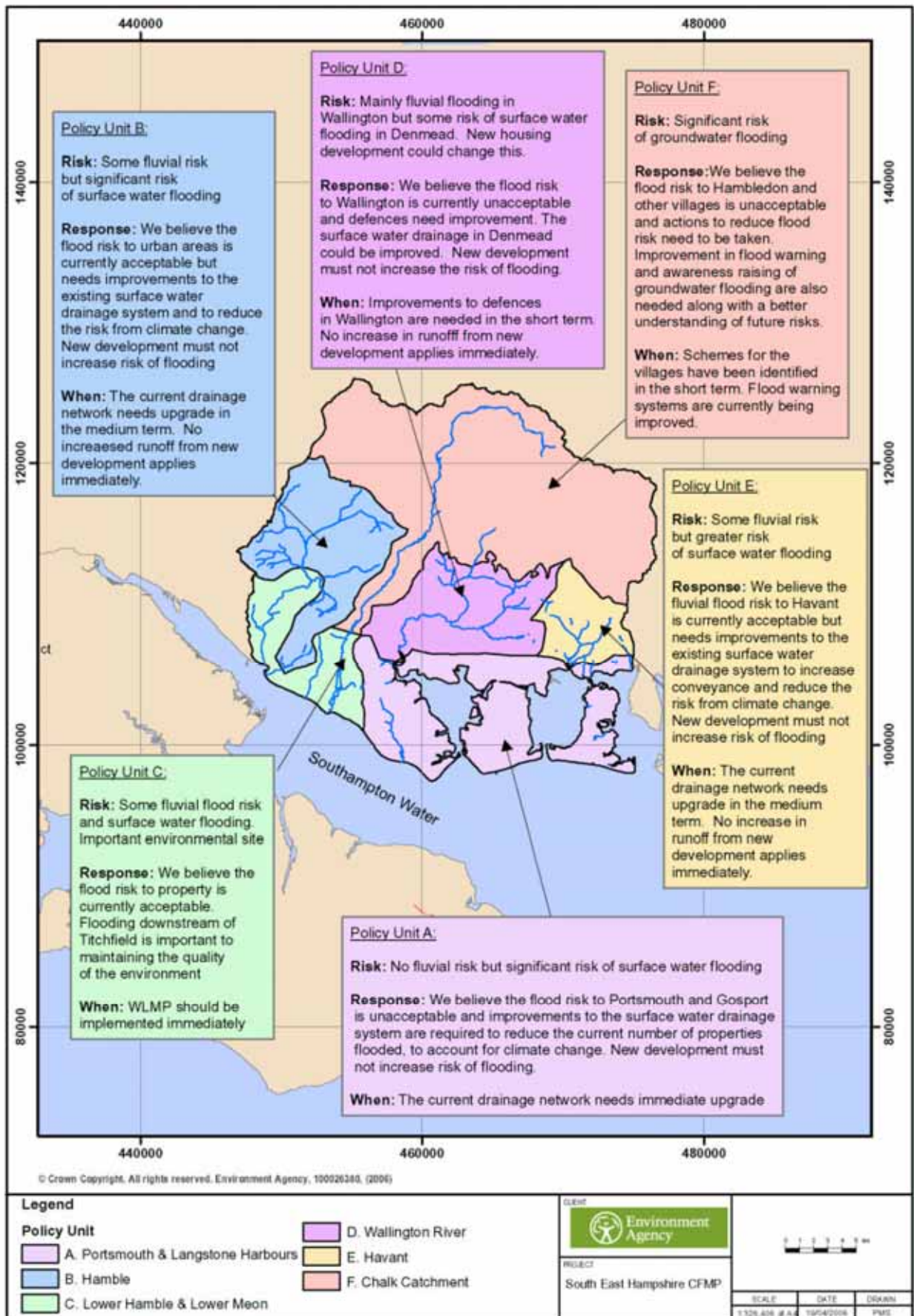
The CFMP is based on opportunities within flood risk management activities, such as possible improvements to designated sites and other features by using and controlling floodplain storage better. These opportunities may be subject to constraints, which include issues such as development pressures and how sensitive the environment is to change.

We have identified catchment objectives based on specific issues, features or problems that relate to flooding, taking into account the opportunities and constraints identified. We have put a number of catchment wide-objectives forward relating flood risk to people, properties and the environment. We have agreed nine objectives during the consultation that took place during the scoping stage. We have used these objectives to appraise policies for managing flood risk in the CFMP catchment.

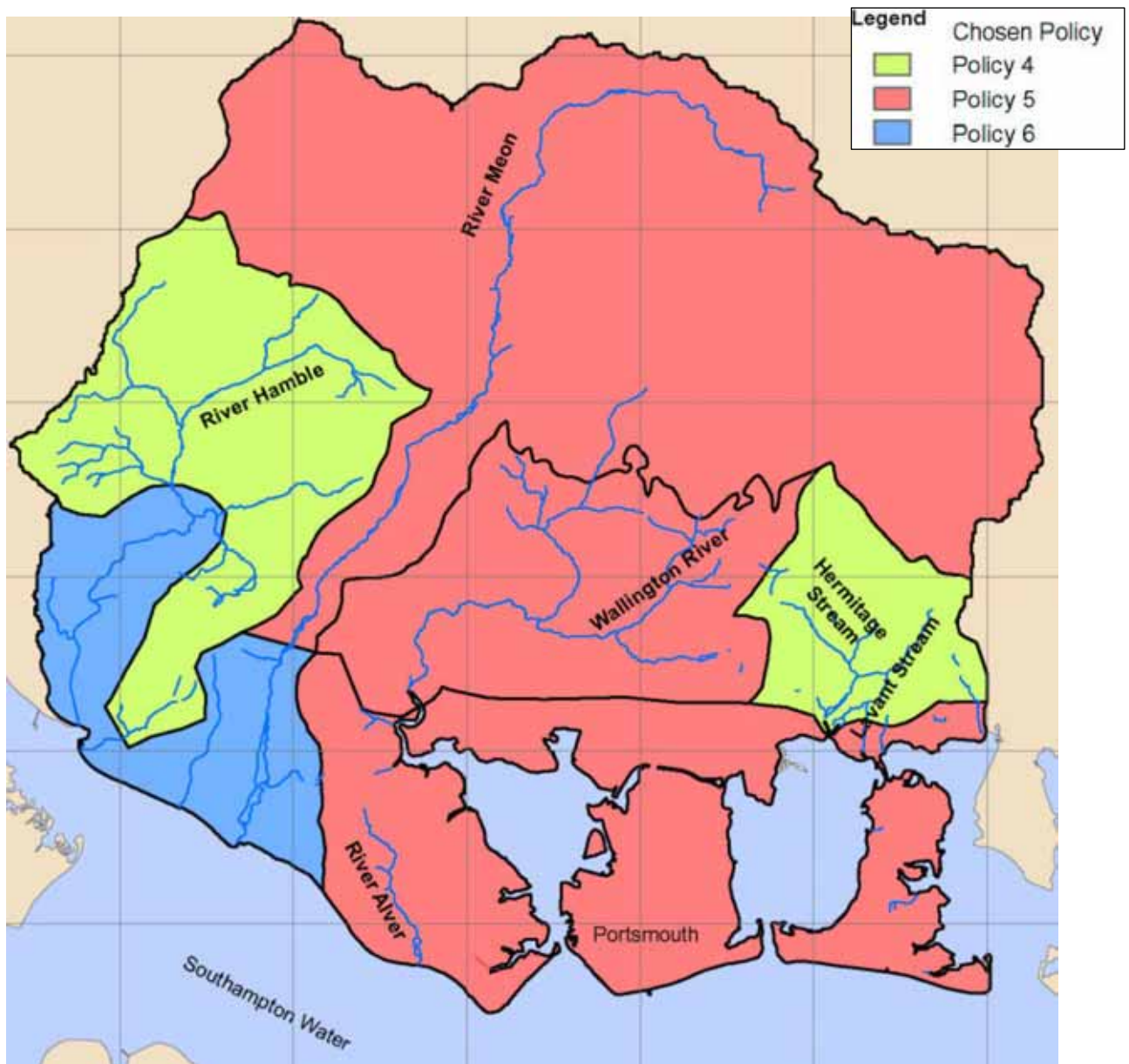
## Policy appraisal

We have used the catchment objectives to appraise six standard policies for flood risk management in the catchment. We have selected the most appropriate policy for various parts of the catchment ( 'policy units') using a rigorous appraisal process, based on how well a policy helps to achieve catchment objectives. A summary of policies for the catchment, a table detailing the policies and a map identifying the locations of the policy units are shown below.

We welcome your comments and input to this draft CFMP. Please send your responses to:  
**Ian Walker (South East Hampshire CFMP Project Manager) at Environment Agency, Guildbourne House, Chatsworth Road, Worthing West Sussex BN11 1LD by 26<sup>th</sup> October 2007.**  
**email: [ian.s.walker@environment-agency.gov.uk](mailto:ian.s.walker@environment-agency.gov.uk).**



Policy Unit	Draft Policy
A – Portsmouth & Langstone Harbours	5 - Take further action to reduce flood risk
B – Hamble	4 - Take further action to sustain the current level of flood risk into the future
C – Lower Hamble & Lower Meon	6 - Take action to increase the frequency of flooding to deliver benefits locally or elsewhere
D – Wallington River	5 - Take further action to reduce flood risk
E – Havant	4 - Take further action to sustain the current level of flood risk into the future
F – Chalk Catchment	5 - Take further action to reduce flood risk



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# 1 Introduction

In this section we outline the aims of the South East Hampshire CFMP draft report and consider how the CFMP process relates to flood risk management and to other plans and policies.

The draft report follows on from the scoping and inception reports and develops the understanding of flood risk and catchment processes further to produce catchment objectives for flood management. We also consider future scenarios of catchment change. The objectives then guide the flood risk management policy for the catchment.

## 1.1 Background

### 1.1.1 Flood risk management

We, the Environment Agency, working closely with planning partners involved within the land and water environment, are committed to developing single, integrated strategic plans for flood risk management; Catchment Flood Management Plans (CFMPs). CFMPs are part of our Strategy for Flood Risk Management (2003/04 to 2007/08). The CFMP process is promoted by the Department for Environment, Food and Rural Affairs (Defra) as part of its programme to address fluvial and coastal flood risk. The coastal risks are dealt with by Shoreline Management Plans (SMPs), which are developed in parallel with CFMPs. The location of the South East Hampshire CFMP and surrounding CFMPs is shown in Figure 1. The boundary of the East Solent SMP and the main urban areas within the catchment are shown in Figure 3.

Flood risk management can involve three levels of planning or action.

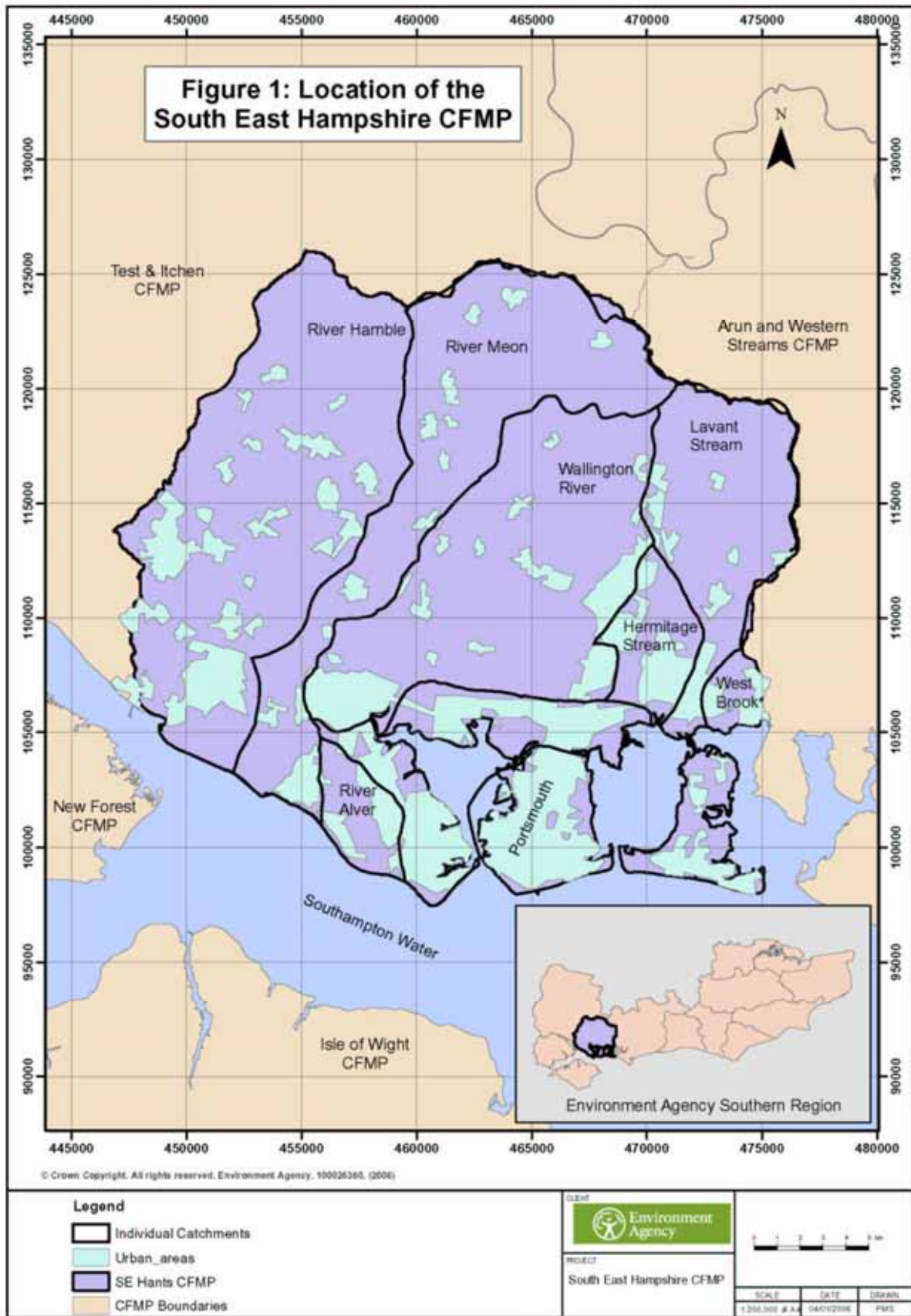
- Level 1: CFMP at catchment scale producing sub-catchment policies
- Level 2: River strategy at river valley scale
- Level 3: Project or action at river reach scale

Flood risk is made up of two parts: the chance (or probability) of a particular flood event and the impact (or consequences) that the event would have if it occurred. The CFMP policies will establish whether we should take action to increase, decrease or maintain the current risk of flooding. The completed CFMP will present recommended objectives for the catchment and outline flood risk management policies within a supporting framework that will help future decisions. Specific measures to manage flood risk will not be identified, but these may be progressed as part of more detailed studies at the lower planning or action levels lying beneath the CFMP.

For the South East Hampshire CFMP catchment, the main studies already completed include:

- Winter 2000 to 2001 Groundwater and Fluvial Flooding in Hampshire: Overview Report (Environment Agency 2002).
- East Hampshire Rivers Strategy Report (Atkins 2003)

An understanding of flood risk issues in the catchment was presented in the South East Hampshire scoping report (June 2006). Comments from the project steering group were incorporated into the report. Following consultation on the scoping report, the next stage in developing the CFMP has built on the understanding of flood risk and catchment objectives to decide on policies for flood risk management that can be applied to the catchment.



## 1.1.2 Planning for the future

The CFMP policies will set the overall direction of flood risk management at the catchment scale for the next 50 to 100 years. This will be part of a vision shared by us and our planning partners for a healthy rich and diverse environment. Where possible, we will aim to work with the naturally occurring physical processes, which act over long timescales and have consequences for sustainable land and water use. The CFMP itself aims to develop flood-risk management policies, rather than specific flood-risk management measures, and will represent long-term, aspirational targets.

The CFMP aims to manage the risks from flooding 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
- deliver the greatest environmental, social and economic benefit, consistent with the Government's sustainable development principles.

In this way we will secure efficient and reliable funding mechanisms that deliver the levels of investment required to achieve the vision of Defra's Making Space for Water Delivery Plan.

Whilst we are responsible for effectively managing these risks, we need to work closely with other interested groups involved in managing the land and water environment in the long-term. So, we work with our main partners on the CFMP steering group to guide the CFMP process. Section 1.3 and Figure 2 show the links between flood risk management plans and the wider planning framework.

The CFMP will identify broad policies for sustainable flood risk management that are applicable over the whole catchment and for the longer term (50 to 100 years). The plan will not necessarily determine specific ways of reducing flood risk or managing flooding issues in the individual catchments. We will try to assess the general trends of catchment changes in 50 to 100 years' time. We plan to review the CFMP every six years and update it to reflect physical changes within the catchment, revised plans and policies and any improved understanding of the natural processes.

## 1.2 Aims and scope

### 1.2.1 Main objectives

The following objectives are common to all CFMPs and provide the necessary framework for developing and appraising sustainable policies.

The main objective is to:

- develop complementary policies for managing flood risk within the catchment in the long-term, taking into account the likely impacts of changes in climate, the effects of land use and land management, that bring a range of benefits, and that contribute towards sustainable development.

Overall objectives are:

- to carry out a high-level strategic assessment of current and future flood risk from all sources within the catchment by understanding the parts that make up risk (both probability and consequence) and the effect of current measures to reduce flood risk;
- to identify opportunities and constraints within the catchment for reducing flood risk through strategic changes or responses such as changes in land use, land management practices and/or the flood defence infrastructure;

- to identify opportunities during flood risk management to maintain, restore or improve the total stock of natural and historic assets (including biodiversity);
- to identify the relative priorities for strategic studies, actions or projects to manage flood risk within the catchment, and give responsibility to the Environment Agency, other operating authorities, local authorities, water companies or other key interested groups.

## 1.2.2 Aims

In summary, the main aims of the South East Hampshire CFMP are:

- to reduce the risk of flooding and harm to people, the natural, historic and built environment caused by floods;
- to maximise opportunities to work with nature, bringing a range of benefits from flood risk management, and making an effective contribution to sustainable development;
- to support the implementation of EU directives, Government and other interested organisations' policies and targets, and our environmental vision to create a better place (details on our website: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk));
- to promote sustainable flood risk management;
- to inform and support planning policies, statutory land use plans and implementation of the Water Framework Directive.

There is an overall aim to reduce flood risk in the most environmentally acceptable way. Land use policies should reflect the need to support a naturally functioning floodplain as the main way of reducing flood risk to people and property. The policies are concerned with setting the right strategic approach, realising that it is not realistic (in social, economic and environmental terms) within many catchments to reduce flood risk everywhere. When choosing which policies to implement, we have to decide where we need to do more to reduce or sustain flood risk, where we need to change or reduce what we are currently doing, or where we need to do little or nothing.

## 1.2.3 Main functions of the CFMP report

The report presents the results of activities during the main stage of developing the CFMP. The main activities during this stage are:

- using the assessment of current flood risk, opportunities and constraints and catchment flood risk management objectives developed during the scoping stage to decide on policies for flood risk management in the catchment;
- assessing the proposed policies against future scenarios of catchment change, set within the context of existing policies and plans, to review how things might look in the future;
- presenting the scope of activities and programme for implementing the CFMP;
- helping to involve the key interested groups in the CFMP process.

Following a consultation period on the report, the CFMP will be implemented.

The appraisal process uses broad-scale modelling (BSM) of the main river networks, to give a high level overview of flood risk in the catchment. With this approach existing data and models have been used

where it is possible to easily apply them. The results from the CFMP, including any flood outlines developed, do not replace any existing information the Environment Agency may hold on flood risk in a particular area. For example they are not intended to be used under Section 105 of the Water Resources Act 1991.

## 1.3 Policies and links with other plans

Catchment Flood Management Plans form part of an integrated approach to flood risk management. Other related plans and projects include land use management and development planning, biodiversity and habitat action plans, and other water management plans developed by us, local authorities and utility companies. The CFMP process includes a review of the following plans and strategies:

- Water Framework Directive (WFD): River Basin Classification Studies
- Water Level Management Plans (WLMP)
- East Solent Shoreline Management Plan (SMP)
- Hampshire Strategic Flood Risk Assessment
- Hampshire County Structure Plan 1996-2011
- District and borough local plans
- Partnership for Urban South Hampshire “Where Shall We Live?” Consultation
- Partnership for Urban South Hampshire Strategic Flood Risk Assessment

Reviewing these initiatives identified policies or objectives that could affect, or be influenced by, flood risk management issues covered by the South East Hampshire CFMP. The review considered constraints that flood risk management policies would need to work within and opportunities for working towards meeting other objectives. Specifically, reviewing these policies during the inception phase of the SE Hampshire CFMP identified significant pressures in the catchment as a result of urban development. The CFMP needs to make sure that the risk of flooding for that new development is managed properly.

The CFMP provides a tool to link the various initiatives together to move towards an integrated spatial plan for flood risk management. Figure 2 shows how the CFMP is intended to fit within the wider statutory or non-statutory planning framework in place in England and Wales. The CFMP has a strong link with the land-use (spatial) planning process. This link is on two levels; Regional Spatial Strategies and Local Development Frameworks.

The development of CFMPs and Shoreline Management Plans (SMPs) will help us to reduce flood risk and deliver multiple benefits. These multiple benefits include the environmental objectives identified in River Basin Management Plans under the Water Framework Directive. The European Commission has recently proposed a new directive on the assessment and management of flood risk (the Floods Directive). The Floods Directive aims to reduce the risk to human health, the environment and economic activity associated with floods. The directive will require the preparation of Flood Risk Management Plans (FRMPs) that will sit alongside the River Basin Management Plans prepared under the Water Framework Directive. The FRMPs we prepare in the future will build on our Catchment Flood Management Plans and Shoreline Management Plans.

CFMP policies are driven by the extent, nature and scale of current and future flood risk across the whole catchment, with the overall aim of reducing this flood risk by meeting specific CFMP objectives. The policies aim to set the right strategic approach in managing the overall flood risk across the CFMP area. Within many catchments it is not realistic (in social, economic and environmental terms) to reduce flood risk everywhere and so it is important to understand where the greatest risks are, and why they are there, before choosing which policies to implement. Difficult decisions must be made when selecting policies to decide where there is a need to take further action to reduce or sustain flood risk, where to change or reduce current management activities, or where to take little or no action.

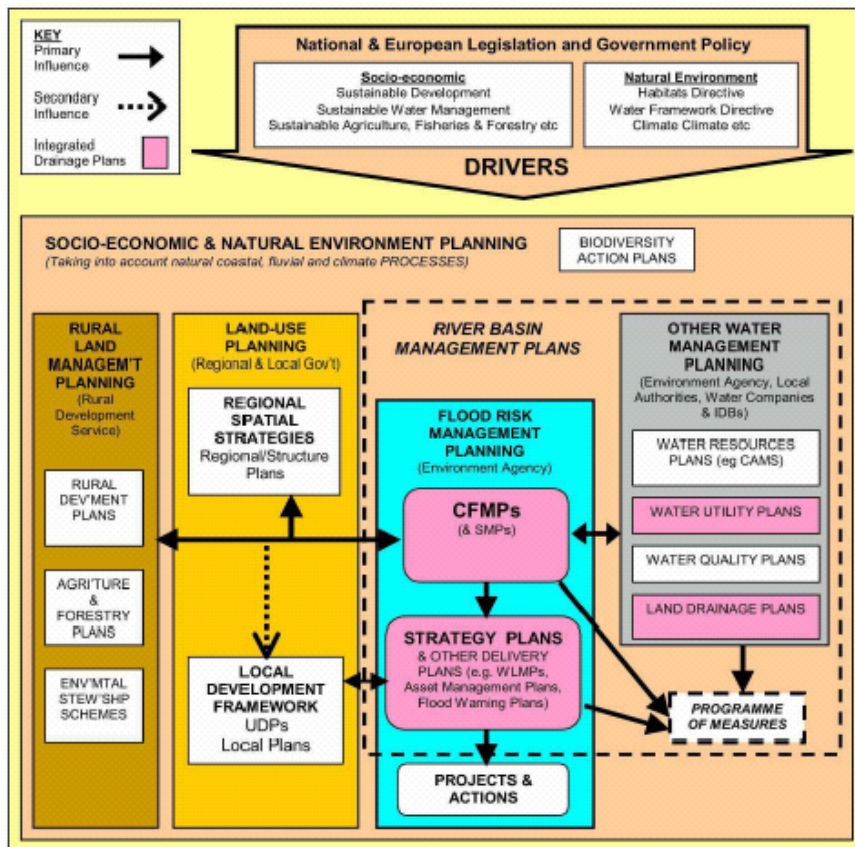


Figure 2. CFMPs in relation to other initiatives

The CFMP shows the broad areas where these actions need to take place. These areas are known as 'policy units' and it is at this scale that policies addressing the level of flood risk will be set. Measured against catchment objectives and possible future changes, these policies will address the level of flood risk in the catchment. The policies are as follows:

1. No active intervention (including flood warning and maintenance). Continue to monitor and advise.
2. Reduce existing flood risk management actions (accepting that flood risk will increase over time).
3. Continue with existing or alternative actions to manage flood risk at the current level (accepting that flood risk will increase over time from this baseline).
4. Take further action to sustain current scale of flood risk into the future (responding to the potential increases in flood risk from urban development, land use change, and climate change).
5. Take further action to reduce flood risk (now and/or in the future).
6. Take action to increase the frequency of flooding to deliver benefits locally or elsewhere, (which may constitute an overall flood risk reduction, for example for habitat inundation).

In simple terms, these policies determine whether we should take action to increase, decrease or maintain the current level of flood risk.

## 1.4 Timetable

The main stages of the South East Hampshire CFMP are outlined below, with key results and consultation periods.

Table 1: Timetable for the SE Hampshire CFMP process

<b>Date</b>	<b>Stage</b>	<b>Result</b>
<b>September 2005</b>	<b>Start inception stage</b>	
November 2005 December 2005	Steering group meeting Complete inception stage	Review of draft inception report Issue inception report
<b>January 2006</b>	<b>Start scoping stage</b>	
May 2006	Steering group Meeting/stakeholder workshop	Guidance on catchment objectives and steer on possible catchment change scenarios
June 2006	Issue scoping report Begin scoping consultation	Scoping report
September 2006	End scoping consultation	Feedback on catchment understanding to date
<b>January 2007</b>	<b>Start main stage</b>	
April 2007	Policy appraisal workshop	Development of catchment policies and future flood risk scenarios
July 2007	Draft CFMP report and Environmental Report	Draft CFMP
October 2007	Start consultation on draft CFMP End consultation on draft CFMP	Formal consultation feedback
<b>January 2007</b>	<b>Final CFMP published</b>	Adopt and publish final CFMP  Periodic review of CFMP

## 1.5 Involving others

We cannot reduce flood risk across England and Wales on our own. It is essential that all of the main organisations and decision-makers in a catchment work together to plan and take action to reduce flood risk. The aim of the South East Hampshire CFMP is to make people aware of the most important factors influencing flood risk within the catchment in the future and to understand better where, when and how we and others can best manage that flood risk.

Involving a project steering group has helped to make sure that there is consistency across all of the CFMPs in the Southern Region of the Environment Agency. It has also raised awareness of significant social, economic and environmental issues at the regional level. Table 2 shows the members of the group. The group has a role in balancing the needs of interested groups, providing guidance on policy development and considering high-level impacts of proposed policies. The steering group reviews,

comments on and endorses each of the reports. The members of the group aim to promote and support the flood risk management policies once they have been adopted.

Table 2: Steering group membership

<b>South East Hampshire CFMP steering group membership</b>	
<ul style="list-style-type: none"> <li>• Natural England</li> <li>• Hampshire County Council</li> <li>• Defra</li> <li>• Winchester City Council</li> <li>• Southern Water</li> <li>• Hampshire Wildlife Trust</li> </ul>	<ul style="list-style-type: none"> <li>• Portsmouth City Council</li> <li>• Havant Borough Council</li> <li>• Fareham Borough Council</li> <li>• East Hampshire AONB</li> <li>• East Hampshire District Council</li> <li>• Gosport Borough Council</li> </ul>

An Environment Agency Project Manager has co-ordinated work with internal staff. The project team consists of staff with relevant local and specialist knowledge of strategic planning, asset management, flood incident management, flood mapping, development control, planning, operations, environmental management, water resources and fisheries, recreation and biodiversity. As well as the contributions from the steering group, we have been consulting with a wider group who have an interest in the CFMP. Table 1 shows the consultation timetable.

During the main stage we held a steering group meeting to discuss the policy appraisal and to set actions for various parts of the catchment. It is vital that we involve and work with interested groups when developing the draft CFMP. We are also consulting with other organisations and the public, so that people are aware of the plans and encouraged to contribute. During this stage of the CFMP process, we will make documents available to the public via our website and in local libraries.