Environment Agency

River Ouse Catchment Flood Management Plan

Summary Report December 2009

We are the Environment Agency. It's our job to look after your environment and make it a better place – for you, and for future generations.

Your environment is the air you breathe, the water you drink and the ground you walk on. Working with business, Government and society as a whole, we are making your environment cleaner and healthier.

The Environment Agency. Out there, making your environment a better place.

Published by:

Environment Agency
Guildbourne House
Chatsworth Road
Worthing, West Sussex BN11 1LD
Tel: 08708 506 506
Email: enquiries@environment-agency.gov.uk
www.environment-agency.gov.uk

Introduction

I am pleased to introduce our summary of the Ouse Catchment Flood Management Plan (CFMP). This CFMP gives an overview of the flood risk in the Ouse catchment and sets out our preferred plan for sustainable flood risk management over the next 50 to 100 years.

The Ouse CFMP is one of 77 CFMPs for England and Wales. Through the CFMPs, we have assessed inland flood risk across all of England and Wales for the first time. The CFMP considers all types of inland flooding, from rivers, groundwater, surface water and tidal flooding, but not flooding directly from the sea (coastal flooding), which is covered by Shoreline Management Plans (SMPs). Our coverage of surface and groundwater is however limited due to a lack of available information.

The role of CFMPs is to establish flood risk management policies which will deliver sustainable flood risk management for the long term. This is essential if we are to make the right investment decisions for the future and to help prepare ourselves effectively for the impact of climate change. We will use CFMPs to help us target our limited resources where the risks are greatest.

This CFMP identifies flood risk management policies to assist all key decision makers in the catchment. It was produced through a wide consultation and appraisal process, however it is only the first step towards an integrated approach to flood risk management. As we all work together to achieve our objectives, we must monitor and listen to each others progress, discuss what has been achieved and consider where we may need to review parts of the CFMP.

The main source of flood risk in the Ouse CFMP area is from both localised river flooding, which is made worse by the influence of the tide, and some surface water flooding. The risk is mainly located in Lewes, Newhaven and Uckfield.

We cannot reduce flood risk on our own, we will therefore work closely with all our partners to improve the co-ordination of flood risk activities and agree the most effective way to management flood risk in the future. The key partners we have worked with are Natural England, Southern Water, East Sussex County Council, Lewes District Council, Mid Sussex District Council, South East Water, Sussex Ouse Conservation Society, Wealden District Council.

This is a summary of the main CFMP document, if you need to see the full document an electronic version can be obtained by emailing **enquiries@environment-agency. gov.uk** or alternatively paper copies can be viewed at any of our offices in Southern Region.

Toby Willison
Regional Director, Southern Region

Contents

The purpose of a CFMP in managing flood risk

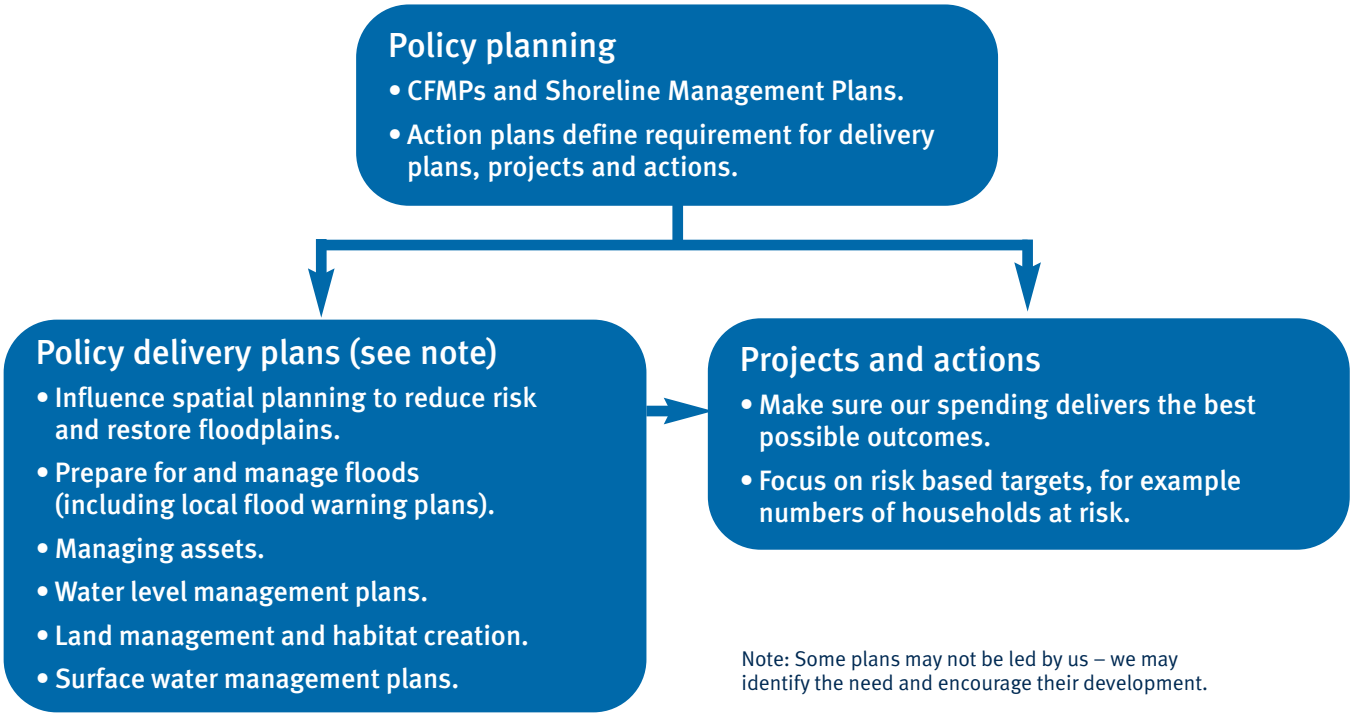
CFMPs help us to understand the scale and extent of flooding now and in the future, and set policies for managing flood risk within the catchment. CFMPs should be used to inform planning and decision making by key stakeholders such as:

- The Environment Agency, who will use the plan to guide decisions on investment in further plans, projects or actions;
- Regional planning bodies and local authorities who can use the plan to inform spatial planning activities and emergency planning;
- IDBs, water companies and other utilities to help plan their activities in the wider context of the catchment;
- Transportation planners;
- Land owners, farmers and land managers that manage and operate land for agriculture, conservation and amenity purposes;
- The public and businesses to enhance their understanding of flood risk and how it will be managed.

CFMPs aim to promote more sustainable approaches to managing flood risk. The policies identified in the CFMP will be delivered through a combination of different approaches. Together with our partners, we will implement these approaches through a range of delivery plans, projects and actions.

The relationship between the CFMP, delivery plans, strategies, projects and actions is shown in figure 1.

Figure 1. The relationship between CFMPs, delivery plans, projects and actions.



Note: Some plans may not be led by us – we may identify the need and encourage their development.

Catchment overview

The River Ouse CFMP covers an area of approximately 605 square kilometres and is home to around 165,000 people. The main urban centres are located either on the coastal plain, in towns such as Newhaven and Seaford, or in inland towns such as Lewes, Uckfield and Haywards Heath. Its unique landscape and natural beauty make it an important recreational and tourist destination. A significant area of the catchment is designated as Area of Outstanding Natural Beauty (AONB) including the High Weald and South Downs AONBs. The South Downs AONB is also within the area of the South Downs National Park. The area is particularly environmentally rich and includes one Special Protection Area (SPA), three Special Areas of Conservation (SACs), two National Nature Reserves (NNRs) and 24 Sites of Special Scientific Interest (SSSIs). Many of these sites support important wetland habitats and species sensitive to changes in water level, flow and quantity.

The River Uck is one of the main tributaries of the River Ouse. Relatively steep slopes and channel gradient can produce relatively rapid run-off causing the river to respond quickly to heavy rainfall events. The upper parts of the River Ouse in comparison are not as steep and the river flows through gently undulating countryside. Below the confluence with the River Uck, the River Ouse is characterised by a broad floodplain through which the river meanders down to Lewes. At Lewes the River Ouse flows through a narrow gap in the chalk hills of the South Downs, emerging onto the low lying Lewes Brooks where the river becomes tidal as it approaches the coast at Newhaven.

‘Many protected areas support important wetland habitats and species sensitive to changes in water level, flow and quantity.’

← View of the River Ouse from Lewes Railway Land Local Nature Reserve.

Map 1. Overview map of the Ouse catchment.

‘The River Uck catchment has relatively steep slopes and channel gradient, which results in rapid run-off causing the river to respond quickly to heavy rainfall events. The upper parts of the River Ouse in comparison are not as steep, flowing through gently undulating countryside.’

Current and future flood risk

Overview of the current flood risk

Flood risk is the combination of the likelihood of a flood occurring and the consequences when it does. We have assessed flood risk across the CFMP area using broad-scale computer modelling, though making best use of existing knowledge and models where appropriate. Flood risk figures take into account current flood defences. Around 880 properties (residential and commercial) are at risk of flooding from the rivers during a 1% annual probability flood event. The impact of flooding to the environmentally designated sites is generally positive with benefits to many habitats, such as floodplain grazing marsh, which support a wide diversity of invertebrate and amphibious species. Flooding occurs from a number of sources including rivers (fluvial and tidal flooding), urban surface water run-off exacerbated by inadequate local drainage, run-off from fields and groundwater flooding. Known and potential flood prone areas include Lewes, Newhaven, Seaford, Uckfield, Haywards Heath and Lindfield.

There have been a number of major flooding events over the last century, including the 1960, 1979, 1987, 1993 and 2000 events that affected the urban areas of Uckfield, Lewes, Haywards Heath and Lindfield. The River Ouse is tidally influenced from Barcombe Mills to Newhaven, which exacerbates river flooding particularly in Lewes and Newhaven.

Where is the risk?

The map on page 10 illustrates the consequences of a 1% annual probability event (1 in 100 year) occurring in the CFMP area.

The areas with the highest concentration of properties at risk from river flooding are tabulated on page 9.

↑ Barcombe Mills floodwaters - February 2006.

How we currently manage the risk

Flood risk management in the Ouse catchment has historically relied on embankments and walls acting to defend areas at risk and we are therefore looking for opportunities to revert the catchment back to its natural state. Our activity is prioritised on a risk basis and our main activities include:

- **The maintenance of existing and the construction of new or replacement flood defences and structures** such as the raised embankments along the tidal reach of the River Ouse from the mouth of the river at Newhaven up to Barcombe Mills. The embankments primarily protect agricultural land, however, approximately 2,000 properties are also currently protected by these structures downstream of Barcombe Mills.
- **Flood forecasting and warnings**, which are currently sent to approximately 60% of the properties at risk of flooding and aim to give at least two hour lead time ahead of river flooding.
- **Development control** to influence spatial planning so that new developments are sited away from flood risk areas or take appropriate mitigation measures and do not make flooding worse for anyone else.
- **Flood risk mapping.**

Table 1. Locations of towns and villages with 25 or more properties at risk in a 1% annual probability river flood.

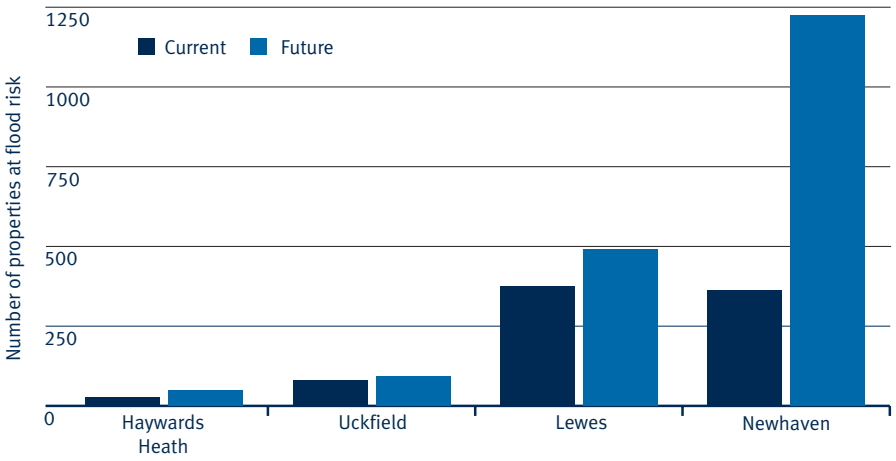
Number of properties at risk	Locations
›1000	None
500 to 1000	None
100 to 500	Lewes, Newhaven
50 to 100	Uckfield
25 to 50	Haywards Heath

Table 2. Critical infrastructure at risk:

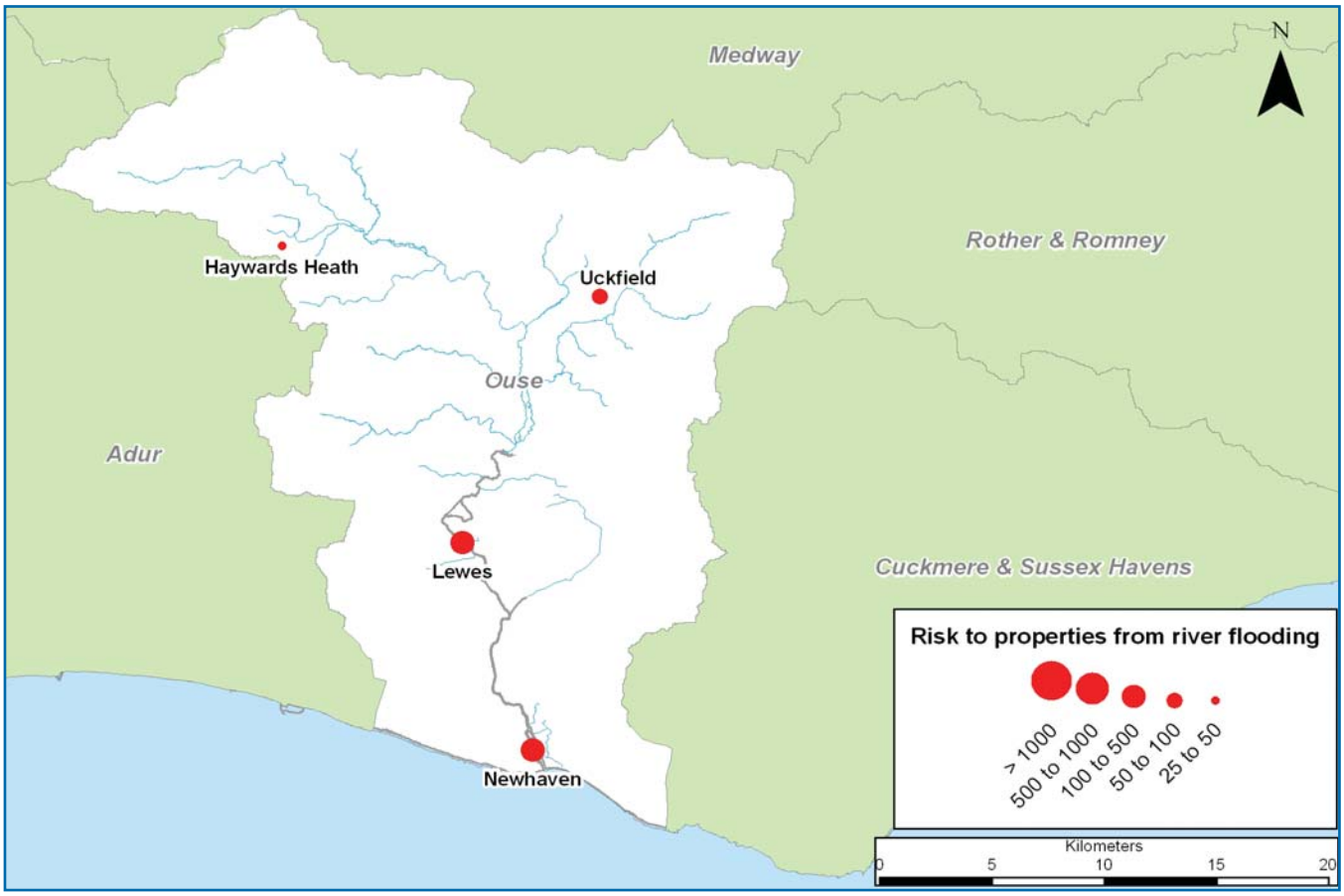
3 emergency services, 6 electricity sub stations, 2 sewage/water treatment works

- **Strategic planning** to plan long term investment.
- **Environmental improvements**.

Figure 2. Current and future (2100) flood risk to property from a 1% annual probability river flood, taking into account current flood defences.



Map 2. Flood risk to property in a 1% annual probability river flood, taking into account current flood defences.



The impact of climate change and future flood risk

The effect that flooding will have in the future is influenced by a range of issues such as climate change, changes in land use such as development, and changes in how land is managed.

Predictions of future change are based on understanding the existing condition of the catchment, an extrapolation of trends over the long term (up to 100 years), and a high level review of likely future change based on research findings and knowledge. Although the catchment is largely rural, development pressures to meet demand for housing within the South East will inevitably result in some urban growth, however, the predicted increase in urban growth relative to the River Ouse catchment area is small and as a whole the catchment is not particularly sensitive to this level of change in urbanisation. There is some evidence to support the likelihood of an very small increase in run-off due to change in land management practices, however, changes to land use and land use management have very little impact on flood risk and are also unlikely to occur on a catchment scale. The broadscale modelling did show that the River Ouse CFMP catchment was sensitive to both increased flow and sea level rise. The scenario which has the greatest effect on future flood risk is climate change with up to 20% increase in peak flood flows. This scenario is used to assess likely impacts in the catchment. In the Ouse catchment the future flood risk is likely to be from river flooding and some surface water flooding. Our appraisal of the future risk in the catchment reveals the number of properties at risk to the 1% annual probability event will increase from 858 to 1872 properties by the year 2100. The majority of these properties are located in Lewes, Newhaven and Uckfield.

The key trends are:

- More frequent and intense storms causing more widespread and regular flooding from drainage systems and some rivers.
- More rain in winter, increasing the likelihood of large scale flood events.

Future direction for flood risk management

Approaches in each sub-area

We have divided the River Ouse catchment into nine distinct sub-areas which have similar physical characteristics, sources of flooding and level of risk. We have identified the most appropriate approach to managing flood risk for each of the sub-areas and allocated one of six generic flood risk management policies, shown in Table 3.

To select the most appropriate policy, the plan has considered how social, economic and environmental objectives are affected by flood risk management activities under each policy option.

Map 3. Sub-areas and flood risk management policies.

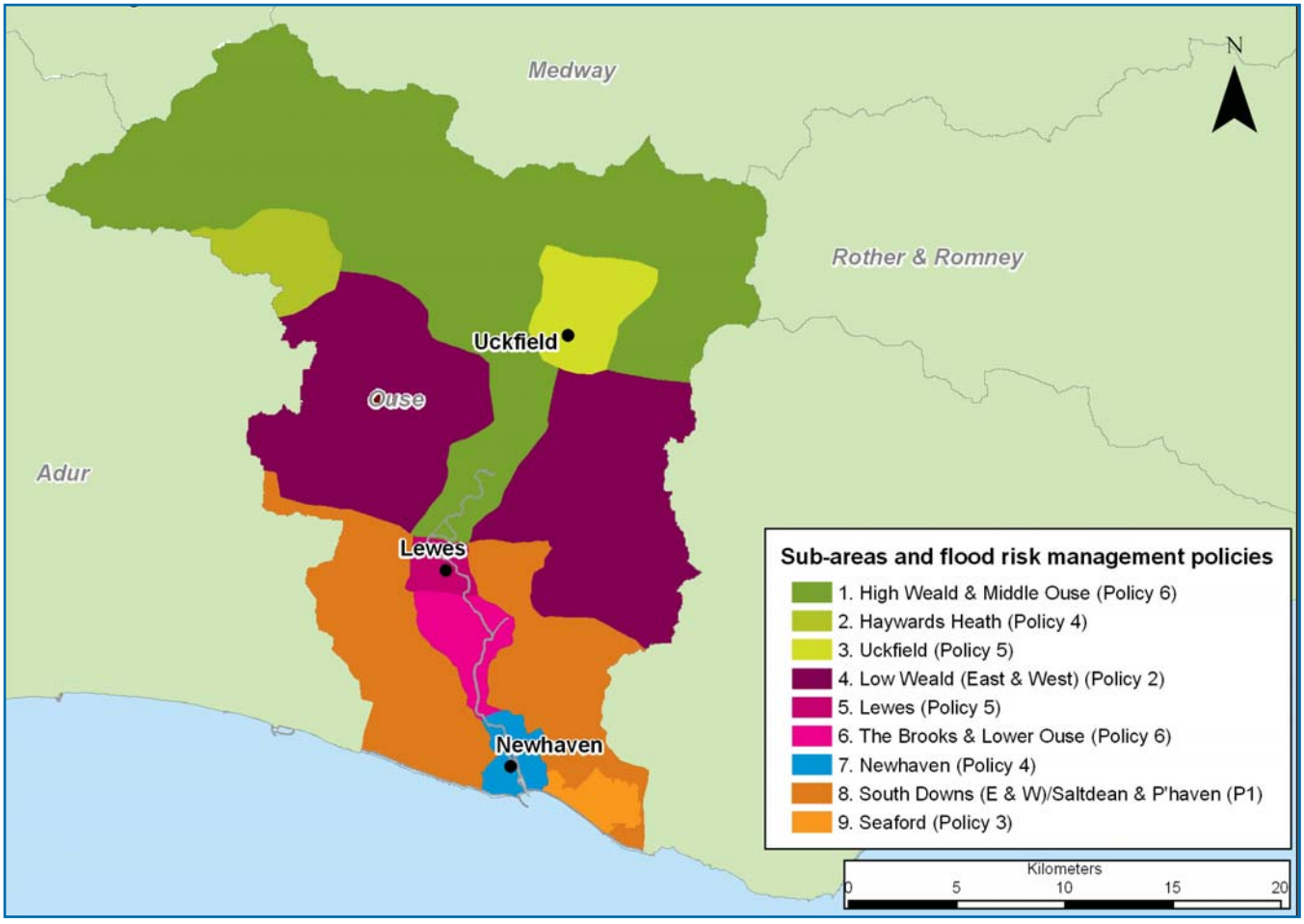


Table 3. Policy options.

→ Policy 1

Areas of little or no flood risk where we will continue to monitor and advise

This policy will tend to be applied in those areas where there are very few properties at risk of flooding. It reflects a commitment to work with the natural flood processes as far as possible.

→ Policy 2

Areas of low to moderate flood risk where we can generally reduce existing flood risk management actions

This policy will tend to be applied where the overall level of risk to people and property is low to moderate. It may no longer be value for money to focus on continuing current levels of maintenance of existing defences if we can use resources to reduce risk where there are more people at higher risk. We would therefore review the flood risk management actions being taken so that they are proportionate to the level of risk.

→ Policy 3

Areas of low to moderate flood risk where we are generally managing existing flood risk effectively

This policy will tend to be applied where the risks are currently appropriately managed and where the risk of flooding is not expected to increase significantly in the future. However, we keep our approach under review, looking for improvements and responding to new challenges or information as they emerge. We may review our approach to managing flood defences and other flood risk management actions, to ensure that we are managing efficiently and taking the best approach to managing flood risk in the longer term.

→ Policy 4

Areas of low, moderate or high flood risk where we are already managing the flood risk effectively but where we may need to take further actions to keep pace with climate change

This policy will tend to be applied where the risks are currently deemed to be appropriately-managed, but where the risk of flooding is expected to significantly rise in the future. In this case we would need to do more in the future to contain what would otherwise be increasing risk. Taking further action to reduce risk will require further appraisal to assess whether there are socially and environmentally sustainable, technically viable and economically justified options.

→ Policy 5

Areas of moderate to high flood risk where we can generally take further action to reduce flood risk

This policy will tend to be applied to those areas where the case for further action to reduce flood risk is most compelling, for example where there are many people at high risk, or where changes in the environment have already increased risk. Taking further action to reduce risk will require additional appraisal to assess whether there are socially and environmentally sustainable, technically viable and economically justified options.

→ Policy 6

Areas of low to moderate flood risk where we will take action with others to store water or manage run-off in locations that provide overall flood risk reduction or environmental benefits

This policy will tend to be applied where there may be opportunities in some locations to reduce flood risk locally or more widely in a catchment by storing water or managing run-off. The policy has been applied to an area (where the potential to apply the policy exists), but would only be implemented in specific locations within the area, after more detailed appraisal and consultation.

High Weald and Middle Ouse

Our key partners are:

Mid Sussex District Council and Wealden District Council

Natural England

National Farmers Union

Farming and Wildlife Advisory Group

High Weald Joint Advisory Committee

The issues in this sub-area

A small extent of the Offham Marshes Sites of Special Scientific Interest (SSSI) is prone to flooding from the 1% annual probability flood event, however periodic flooding is a natural element of the habitat. The key risk in this sub-area is localised river flooding from the River Ouse tributaries in extreme conditions. Defences include maintained and culverted channels and raised defences.

The vision and preferred policy

Policy Option 6 – areas of low to moderate flood risk where we will take action with others to store water or manage run-off in locations that provide overall flood risk reduction or environmental benefits.

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	24	24

The key messages

This policy can deliver benefits for people and the environment locally or in other parts of the CFMP area. It sets a framework that actively supports increased inundation of areas that naturally benefit from being wetter and will help keep water on the land for longer. An increase in flood storage could reduce flood risk to properties in Uckfield and Lewes into the future.

Proposed actions to implement the preferred approach:

- Develop a System Asset Management Plan (SAMP) to review maintenance regimes and aim to restore more sustainable river functions.
- Work with the AONB Joint Advisory Committee to achieve the targets set in the AONB Management Plan.
- Increase the number of whole farm plans under the Sustainable Agriculture and Rivers Project in the upper River Ouse and Uck catchments.
- Investigate removal of structures to restore rivers and floodplains to a naturally functioning state.
- Natural England's agri-environment and woodland schemes grants should be explored to help fund the change of land use and land use management to increase the water retention in the catchment.
- Carry out a Sussex Landcare Project focusing on improving land management.
- Undertake a pre-feasibility study to focus on river restoration from the Sloop Inn to Fletching, including Sheffield Park.
- A pre-feasibility study should be undertaken focusing on opportunities for flood storage and increased floodplain inundation to provide benefits to Lewes. Habitat creation and restoration benefits should also be investigated.
- Develop the Offham Marshes Water Level Management Plan.

↑ Flood waters at New Weir in Barcombe Mills, 2004.

Haywards Heath

Our key partners are:

Mid Sussex District Council

Lewes District Council

Southern Water

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	27	50

The issues in this sub-area

Localised flooding may occur from the Scrase Bridge Stream and West Common Stream as a result of surface water overwhelming urban drainage systems. There is urban development proposed in this sub-area which will have an impact on flood risk into the future.

The vision and preferred policy

Policy Option 4 – areas of low, moderate or high flood risk where we are already managing the flood risk effectively but where we may need to take further actions to keep pace with climate change.

The key messages

It will ensure appropriate urban growth is identified for the sub-area in the South East Plan. There are also opportunities to extend and re-create habitats, such as wet woodland, in order to enhance the nature conservation value or existing river systems.

Proposed actions to implement the preferred approach:

- Develop a System Asset Management Plan (SAMP) to review maintenance regimes.
- Develop a Surface Water Management Plan (SWMP) for Haywards Heath.
- Put in place policies within the local development frameworks that work towards long-term protection and re-creation of the Scrase Bridge Stream and West Common Stream.
- Provide development control advice to ensure no increase in run-off from developments.
- Increase the coverage of the Floodline Warnings Direct in Haywards Heath and Lindfield.
- Install level gauges on the streams within Lindfield to increase the efficiency of Floodline Warnings Direct.

Uckfield

Our key partners are:

- Wealden District Council
- East Sussex County Council (Highways)
- Southern Water

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	79	92

The issues in this sub-area

There is currently a significant risk from fluvial flooding from the River Uck. Flooding in the area can occur relatively frequently and during the less frequent, more severe flood events a significant number of people and property are at risk of flooding. The catchment responds rapidly to rainfall and run-off arrives in the main river very quickly. Surface water flooding and urban drainage flooding is also experienced in this sub-area.

The vision and preferred policy

Policy Option 5 – areas of moderate to high flood risk where we can generally take further action to reduce flood risk.

The key messages

A policy to take further action applies where the current flood risk is demonstrated to be unacceptably high. There is currently a risk from flooding in Uckfield due to the rapid onset of flooding, the high velocities of floodwater and the associated depth of the water. Flood risk management activities need to respond to the current high levels of flood risk.

↑ Uckfield Mills Weir at high flow, February 2007.

Proposed actions to implement the preferred approach:

- Encourage the uptake of Defra's flood resistance and resilience pilot project.
- Seek out funding and partnership opportunities in connection with new developments and consider options for redevelopment of more open river corridors through Uckfield, to reduce the number of properties in the floodplain and therefore reduce the number of properties at risk of flooding.
- Put in place policies within the local development frameworks that work towards long-term protection and reinstatement of a functioning floodplain through Uckfield through sustainable land management.
- Develop a Surface Water Management Plan (SWMP).
- Consider options to increase the coverage of the Floodline Warnings Direct service in Uckfield.
- Investigate the potential for improving the current defences to reduce the cost of flood damages in Uckfield .
- Provide development control advice to ensure no increase in run-off from the new developments proposed in the South East Plan and seek opportunities to reduce current run-off rates, where possible.
- Carry out a study to investigate the potential for an upstream flood storage area. The flood storage area would be provided upstream of Uckfield in the High Weald sub-area.
- Install water level gauges further upstream of Uckfield town centre to increase the efficiency of Floodline Warnings Direct and reduce the risk of flooding to people in Uckfield.
- Develop a System Asset Management Plan (SAMP) to review maintenance regimes with an aim to reduce flood risk.
- Undertake Flood Alleviation Scheme at Uckfield as recommended in the Sussex Ouse Flood Management Strategy.

← Uckfield Rail Station.

Ouse Low Weald (East and West)

Our key partners are:

Mid Sussex District Council

Lewes District Council

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	5	14

The issues in this sub-area

This sub-area is mostly managed grassland and arable land with isolated properties and small settlements. The current flood risk is considered to be low with small areas of localised fluvial flooding associated with the tributaries of the River Ouse, and surface water flooding in Wivelsfield Green, Plumpton Green and Ringmer. Flood risk is not expected to increase in the future due to climate change.

The vision and preferred policy

Policy Option 2 – areas of low to moderate flood risk where we can generally reduce existing flood risk management actions.

The key messages

This policy applies where the current level of flood risk is low and flood risk is not expected to significantly increase in the future. It will allow a controlled reduction in flood risk management maintenance costs to a more appropriate level for the level of flood risk in the sub-area, while focusing flood risk management actions within the communities at higher risk of flooding from local fluvial and surface water sources.

It is recognised that flood risk will change in the future, and management actions may change in time to gain efficiencies or improve effectiveness.

View from Clearwater Lane, Scaynes Hill.

Proposed actions to implement the preferred approach:

- Understanding of flood risk in this sub-area should be enhanced through a pre-feasibility study. This should concentrate on the present flood risk at Plumpton Green and Ringmer.
- Maintain existing level of maintenance within the communities of Ringmer, Plumpton Green and Wivelsfield Green, looking for efficiencies and improvements to ensure the existing flood risk to these communities does not get worse in the future.
- Undertake a System Asset Management Plan (SAMP) to investigate options to better target the available funds for flood risk management.
- Encourage the take up of flood resistance and resilience measures by people at risk of surface water flooding.

Lewes

Our key partners are:

- Lewes District Council
- Southern Water
- East Sussex County Council (Highways)
- Natural England

The issues in this sub-area

This sub-area is largely urban, including the main town of Lewes. There is significant flood risk associated with the River Ouse, which flows through the town centre, and surface water, urban drainage and groundwater flooding. The town is classed as an archaeologically sensitive area with at least ten Scheduled Monuments and additionally there are six Sites of Special Scientific Interest (SSSI) that fully or partly lie in the sub-area (including Lewes Brooks and Offham Marshes). This sub-area includes the Malling at Lewes, Winterbourne Stream at Lewes and the majority of the Lewes community flood warning areas. Flood risk in this sub-area has been assessed as high with a likelihood of increased flood risk in the future.

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	376	490

The vision and preferred policy

Policy Option 5 – areas of moderate to high flood risk where we can generally take further action to reduce flood risk.

The key messages

A policy to take further action applies where the current flood risk is considered to be unacceptably high. Flood risk management activities need to respond to the current level of flood risk taking into account any potential future increases in flood risk.

The current flood defences along the River Ouse through Lewes provide a degree of protection for the more frequently occurring flood events. This policy will reduce flood risk in Lewes either by improving defences or by taking alternative actions, such as improved flood warning or greater flood resilience.

↑ View downstream of Lewes town centre.

Proposed actions to implement the preferred approach:

- Seek funding to carry out flood resistance and resilience in Lewes to make vulnerable homes more resilient to the threat of flooding and thus reduce the cost of flood damages to properties.
- Put in place policies within the local development frameworks that work towards long-term protection and re-creation of the River Ouse corridor through sustainable land management. This should look at opportunities to enhance the biodiversity and reduce the number of properties affected by flooding in Lewes.
- Deliver the outcomes of the Surface Water Management Plan (SWMP) for Lewes looking at all sources of flooding (groundwater, surface water, urban drainage and fluvial flooding).
- Increase the coverage of the Floodline Warnings Direct service in Lewes to reduce the flood risk to people in Lewes and surrounding areas.
- Investigate the potential for installing demountable and the preliminary deployment of temporary defences in advance of permanent solutions through the town centre of Lewes to reduce the cost of flood damages.
- Develop the Offham Marshes Water Level Management Plan to identify water level management that meets the need of flood risk management and the enhancement of the wetland habitat – in conjunction with Middle Ouse sub-area.
- Develop a flood warning system for groundwater flooding. This should focus on the Winterbourne Stream to the west of Lewes to reduce the number of people at risk from groundwater flooding.
- Provide development control advice to ensure no increase in run-off from new developments and seek opportunities to reduce current run-off rates, where possible.
- Take forward Flood Alleviation Schemes at Lewes as recommended in the Sussex Ouse Flood Management Strategy.
- Install water level gauges upstream on the Malling Brooks tributary to increase the efficiency of Floodline Warnings Direct and reduce the flood risk to people in Lewes and surrounding areas.
- Develop a System Asset Management Plan (SAMP) to review maintenance regimes with an aim to reduce flood risk.

The Brooks and Lower Ouse

Our key partners are:

Lewes District Council

Natural England

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	3	22

The issues in this sub-area

This sub-area is mainly rural with isolated settlements within the low lying valley of the River Ouse. The frequency of flooding is likely to increase in this area in the future as a result of sea level rise, the impact of the additional flooding will be minimal. There are no proposed major urban developments in this sub-area.

The vision and preferred policy

Policy Option 6 – areas of low to moderate flood risk where we will take action with others to store water or manage run-off in locations that provide overall flood risk reduction or environmental benefits.

The key messages

The chosen policy can deliver benefits for people and the environment locally or in other sub-areas. By increasing flooding locally in this sub-area, flood risk in Lewes can be reduced. Increasing frequency of inundation is likely to improve wetland biodiversity, as flooding is an essential part of floodplain ecosystems. There is potential to increase the area of existing Lewes Brooks Site of Special Scientific Interest (SSSI) wetland habitat; identified within ambition five of The South Downs Management Plan (Draft June 2006).

Proposed actions to implement the preferred approach:

- Develop the Lewes Brooks Water Level Management Plan to identify water level management that meets the need of flood risk management and the enhancement of the wetland habitat.
- A pre-feasibility study should be undertaken to identify realignment options to increase flood storage and inundation of areas to reduce flood risk and benefit the environment.
- Implement schemes to increase floodplain inundation downstream of Lewes and upstream of Newhaven.
- Develop a System Asset Management Plan (SAMP) to review maintenance regimes.

← Lower Ouse and Lewes Brooks SSSI.

Newhaven

Our key partners are:

- Lewes District Council
- Southern Water
- East Sussex County Council (Highways)

The issues in this sub-area

This sub-area is mainly at risk from tidal flooding as a result of high sea levels entering the river mouth and overtopping the river embankments. The current risk of flooding is low, however climate change is expected to significantly increase the flood risk from tidal flooding. Surface water run-off and urban drainage flooding are also expected to increase over time due to climate change and from planned new development.

The vision and preferred policy

Policy Option 4 – areas of low, moderate or high flood risk where we are already managing the flood risk effectively but where we may need to take further actions to keep pace with climate change.

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	361	1,223

The key messages

There are opportunities to reduce flood risk and improve the existing water quality by promoting and encouraging the use of Sustainable urban Drainage Systems (SuDS) within the new housing developments. Due to the coastal location of the sub-area any actions will have to be undertaken in accordance with the relevant Shoreline Management Plan (SMP) and coastal defence strategies.

Proposed actions to implement the preferred approach:

- Develop a Surface Water Management Plan (SWMP) for Newhaven. This should concentrate on understanding the complexities and links between the various forms of flooding in Newhaven.
- Provide development control advice to ensure no increase in run-off from the new developments, where possible.
- Carry out a more detailed study to investigate the future fluvial and surface water flood risks to Newhaven and surrounding areas as a result of predicted sea level rise.
- Increase the coverage of the Floodline Warnings Direct service in Newhaven.
- Develop a System Asset Management Plan (SAMP) to review maintenance regimes.

Newhaven Harbour at low tide. ➜

South Downs (East and West)/ Saltdean and Peacehaven

Our key partners are:

Lewes District Council

Brighton and Hove City Council

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	0	3

The issues in this sub-area

The current level of flood risk from river, surface water, sewer and groundwater flooding is assessed as low with no increase expected in the future. Flood risk from the sea is dealt with in the Beachy Head to Selsey Bill Shoreline Management Plan (SMP). The South Downs is highly rural with only a very small risk of fluvial flooding from the Glynde Reach. There are raised man-made flood defences, with a design standard for the 3.3% annual probability flood event along parts of the Glynde Reach.

The vision and preferred policy

Policy Option 1 – areas of little or no flood risk where we will continue to monitor and advise.

The key messages

The chosen policy promotes active monitoring and providing advice but does not support any flood risk management actions within the sub-area. For a very small area of this sub-area, maintenance associated with the existing raised man-made defences along the Glynde Reach will continue. This policy also encourages a shift towards best practice in land management. By working with landowners and government this could reduce disruption from surface water flooding to locally important transport links, such as the railway. The southern part of this sub-area is coastal. Any actions in this coastal area will have to be undertaken in accordance with the Beachy Head to Selsey Bill Shoreline Management Plan (SMP).

Proposed actions to implement the preferred approach:

- Continue to monitor and advise.

Seaford

Our key partners are:

- Lewes District Council
- Southern water
- Sussex Police and other emergency services

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	0	4

The issues in this sub-area

This sub-area is largely urban, including the main town of Seaford. There is currently low to medium risk of flooding as a result of surface water running off the South Downs along the dry river valleys and overwhelming urban drainage systems. There are no formal fluvial flood defences or community flood warning areas and no river maintenance is undertaken in this sub-area. Flood risk is not expected to increase significantly in the future due to climate change or urban development.

Seaford is included within the Seahaven Flood Plan (Draft) October 2007. This document sets out the co-ordinated and inter-agency warning mechanism and response to flooding incidents in the Seaford area.

The key messages

The chosen policy applies where the current level of flood risk is demonstrated to be acceptable and the level of flood risk management appropriate to the level of risk. The current flood risk management activities carried out in this sub-area for the surface water urban drainage flooding problems are considered appropriate for the level of flood risk. It is recognised that flood risk management actions may need to change in time to gain efficiencies or improve effectiveness.

There are opportunities to support local schemes and studies already in place to reduce the surface water urban drainage flooding problems in the urban area.

Due to the coastal location of the sub-area any actions will have to be undertaken in accordance with the Beachy Head to Selsey Bill Shoreline Management Plan (SMP).

Proposed actions to implement the preferred approach:

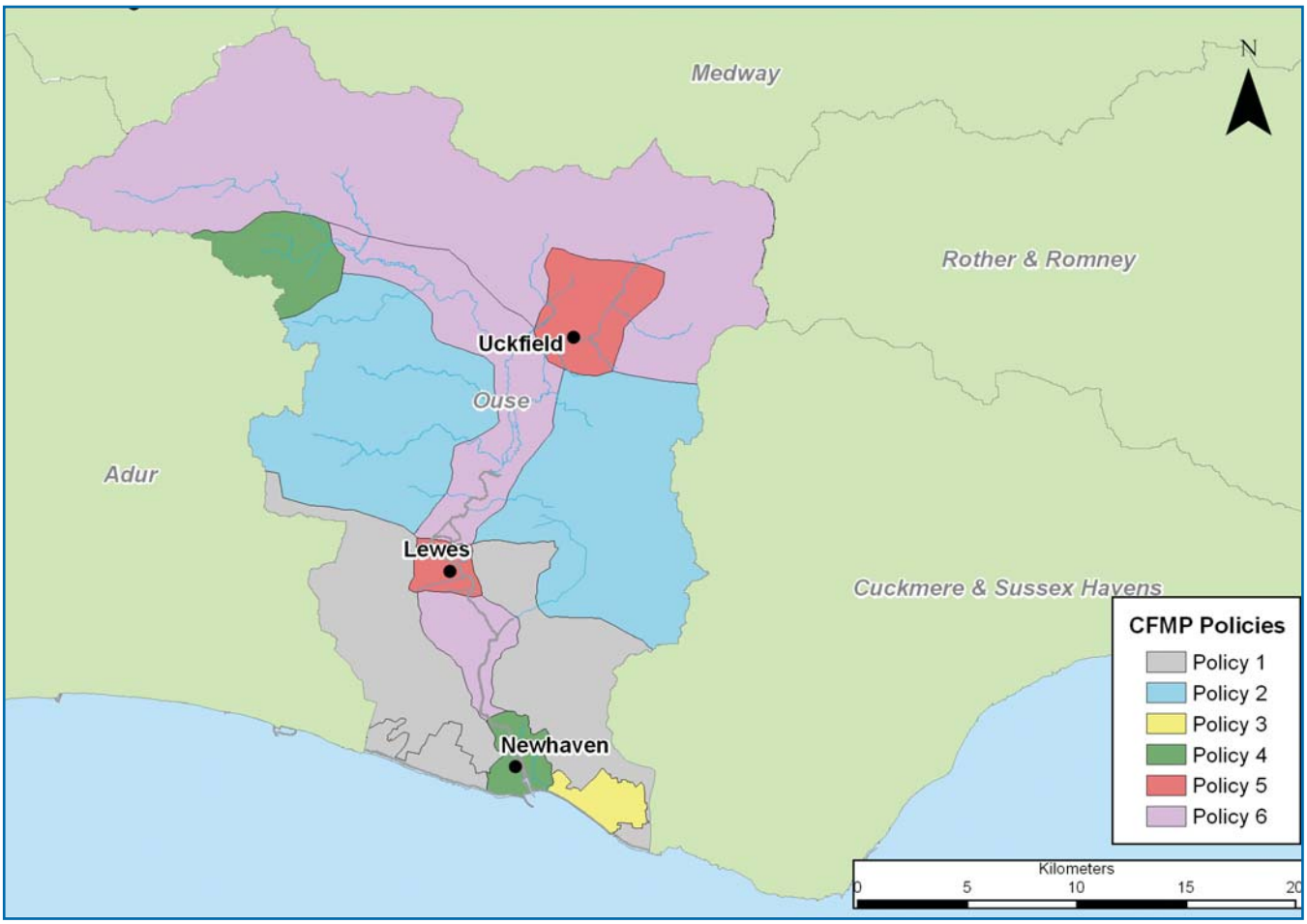
- Continued practice and development of the emergency response plan.
- Develop a Surface Water Management Plan (SWMP) for Seaford with a start date of 2018. The study will review surface water drainage, the implications of tide locking and climate change.

The vision and preferred policy

Policy Option 1 – areas of low to moderate flood risk where we are generally managing existing flood risk effectively.

Map of CFMP policies

Map of the policies in the River Ouse catchment.



Would you like to find out more about us, or about your environment?

Then call us on

08708 506 506 (Mon-Fri 8-6)

email

enquiries@environment-agency.gov.uk

or visit our website

www.environment-agency.gov.uk

incident hotline 0800 80 70 60 (24hrs)
floodline 0845 988 1188

* Approximate call costs: 8p plus 6p per minute (standard landline).
Please note charges will vary across telephone providers

Environment first: Viewing this on screen? Please consider the environment and only print if absolutely necessary.
If you're reading a paper copy, please don't forget to reuse and recycle.

GESO1008BOWG-E-E