

Cuckmere and Sussex Havens Catchment Flood Management Plan

Summary Report December 2009

managing flood risk



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(Front cover) Alfriston in the Lower Cuckmere
Mark Brookes © South Downs Joint Committee.

Introduction



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

The Cuckmere and Sussex Havens 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.

Serious flooding does not occur very often in the Cuckmere and extreme flooding is very rare. The main source is from intense localised flooding causing surface water flooding. This is mainly located in towns of Eastbourne, Polegate and Pevensey.

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. Our partners we have worked with to carry out the actions to reduce flood risk include Cuckmere Flood Forum, Defra, Eastbourne Borough Council, East Sussex County Council, Hastings Borough Council, Lewes District Council, Rother District Council, Natural England, South East Water, Southern Water, 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.

A handwritten signature in blue ink that reads "T. Willison".

Toby Willison
Regional Director, Southern Region

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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:

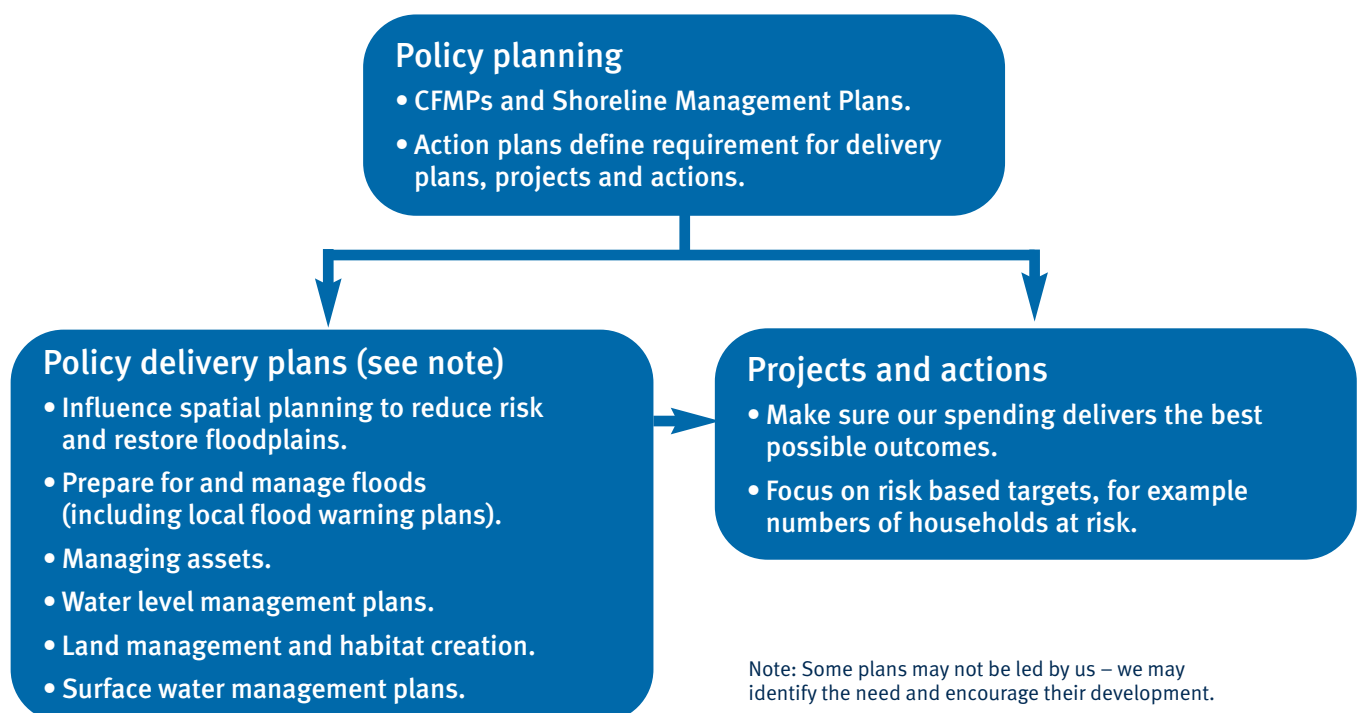
- The Environment Agency, who will use the plan to guide decisions on investment in further plans, projects or actions;
- Regional planning bodies and local authorities who can use the plan to inform spatial planning activities and emergency planning;

- 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.



Catchment overview

The river catchments of this CFMP lie in the county of East Sussex and cover all or parts of the Rother, Lewes and Wealden Districts and the Boroughs of Hastings and Eastbourne. The downstream limit of the Cuckmere CFMP is Cuckmere Haven, here the Selsey Bill to Beachy Head SMP deals with coastal flood risk management issues. At the end of Holywell Cliffs on the Beachy Head outcrop marks the beginning of the Beachy Head to South Foreland SMP.

The landscape varies from the distinctive hills and steep scarp slopes of the South Downs, to the gently rolling hills of the Low Weald and the wide low-lying area of the Pevensey Levels. The flow characteristics of the rivers vary correspondingly, with fast flowing

streams emerging from the Upper Weald area to the north, flowing into the low-lying coastal plain where the gradient is less and the river flows are much slower.

The area is home to approximately 260,000 people with urban centres located on the coast including Eastbourne, Bexhill and Hastings.

Much of the area is recognised for its environmental and cultural value, with the South Downs being an Area of Outstanding Natural Beauty (AONB) and National Park.

The area includes the much visited landscape of Cuckmere Haven and the white cliffs of the Seven Sisters. There are many valuable natural habitats in the area including the Pevensey Levels, which is designated under the Ramsar

convention for migratory wading birds.

The watercourses in the study area have been modified over several hundred years. As early as the 1670s, embankments had been constructed along parts of the lower Cuckmere and in 1846, the course of the river was straightened, cutting off the meanders. The Pevensey Levels area was reclaimed from saltmarsh in the early Middle Ages and during the 1960s and 1970s a comprehensive drainage programme was carried out including installation of weirs, sluices, pumps and other control equipment. These modifications have had a major impact on the rivers and in particular on the nature of flooding.



← Saltmarsh in the Cuckmere Estuary.

Map1. Overview map of Cuckmere and Sussex Havens catchment.



‘The area includes the much visited landscape of Cuckmere Haven and the Seven Sisters. There are many valuable natural habitats in the area including the Pevensey Levels.’

Current and future flood risk

Overview of the current flood risk

Flood risk is the combination of the probability of flooding and its impact, that is, the chance of it happening and the consequence if it does happen.

Serious flooding does not occur very often in the Cuckmere and Sussex Havens CFMP area, and extreme flooding is very rare.

To understand the sources and more importantly likelihood of flooding, it is useful to look at flooding in a historical context. Records of adverse flooding on the Pevensey Levels date back to 1836, when they were reported to be flooded along with much of other low-lying land in Sussex.

In July 1893, a summer storm over Eastbourne resulted in severe surface water flooding in the town, with fountains of water erupting from the manholes in the street, and the recently installed surface drainage system being completely overwhelmed. Notable flood events have occurred six times in the last 35 years, with the most serious being in March 1995 when 56 properties were flooded in Polegate, Willingdon and Eastbourne and in June 2003 when over 50 properties were flooded in Bexhill and Hastings.

Both events were caused by intense localised rainfall leading to surface water flooding.

Where is the risk?

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

The areas with the highest concentration of properties at risk from river flooding are tabulated opposite:



↑ Flooding on agricultural land January 2008.



← Lower reaches of Cuckmere River, Cradle Hill

How we currently manage the risk

The Cuckmere and Sussex Havens catchment has historically been heavily managed and we are looking for opportunities to revert the catchment back to a more natural state. Our activity is prioritised on a risk basis. Our main activities include:

- **Maintenance of existing and construction of new and replacement flood defences and structures** such as the pumping installations across the Willingdon and Pevensey Levels and the tidal sluice gates controlling discharge from the Wallers Haven.
- **Flood forecasting and warnings.**
- **Development control** to influence spatial planning so that new developments are sited away from flood risk areas, or take appropriate mitigation measures.
- **Flood risk mapping.**
- **Strategic planning** to plan long term investment.
- **Environmental improvements.**

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	None
50 to 100	Eastbourne and Willingdon, Pevensey and Pevensey Bay
25 to 50	None

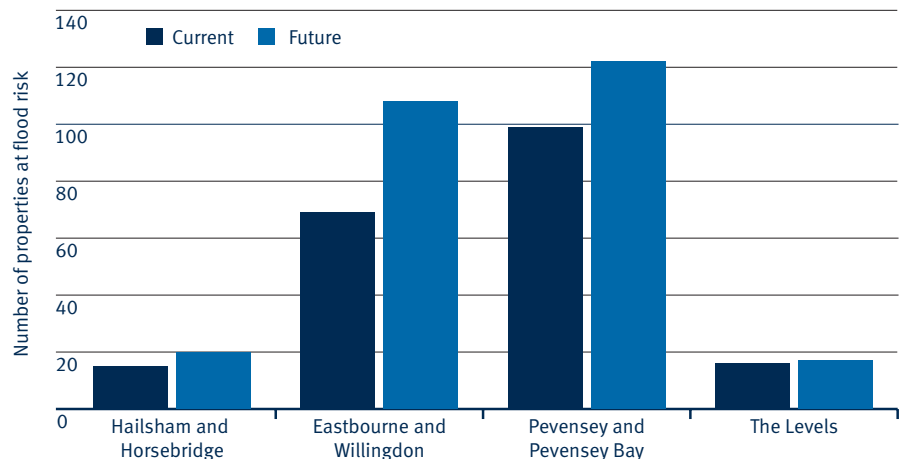
Table 2. Critical infrastructure at risk:

There are currently no facilities at risk from the 1% annual probability flood event

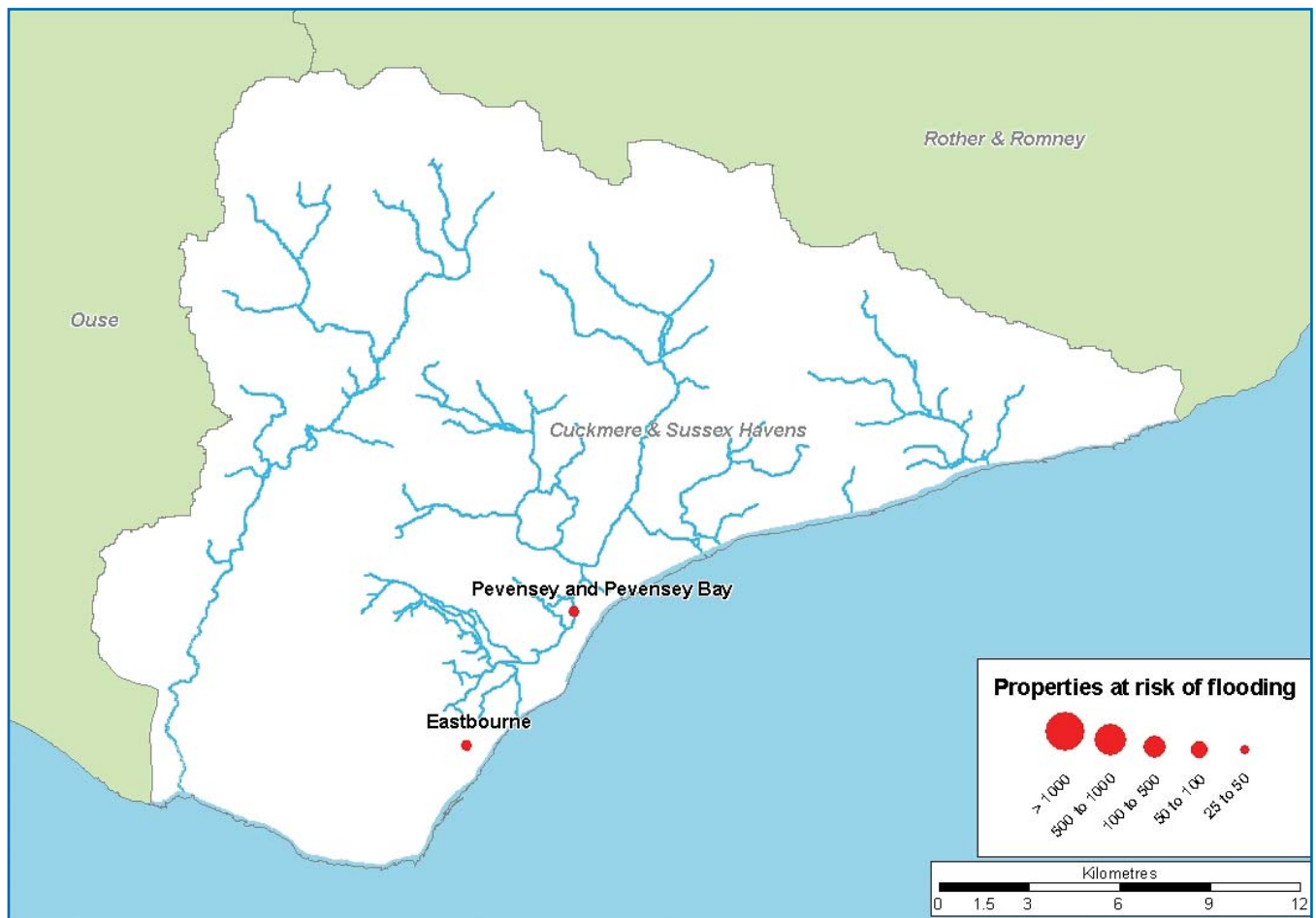
Table 3. Designated sites at risk:

Pevensey Levels RAMSAR

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. Broad-scale modelling shows that the effect of urban development is negligible across the catchment as a whole. There is actually a small decrease predicted in flooding levels, within

the low-lying inland area, as a result of urban development. Changes in land use and land use management such as increased forestation can actually reduce run-off in the upper parts of the catchment, but overall the effects are minimal. Similarly, changes in farming practices only have a minor effect on water levels throughout the catchment. 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 Cuckmere and Sussex Havens catchment the future flood risk is likely to be from surface water flooding due to an increase in

the number of intense storms. 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 192 to 264 properties by the year 2100. The majority of these properties are located in Eastbourne, Willingdon and Pevensey.

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 Cuckmere and Sussex Havens catchment into nine separate 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 4.

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.

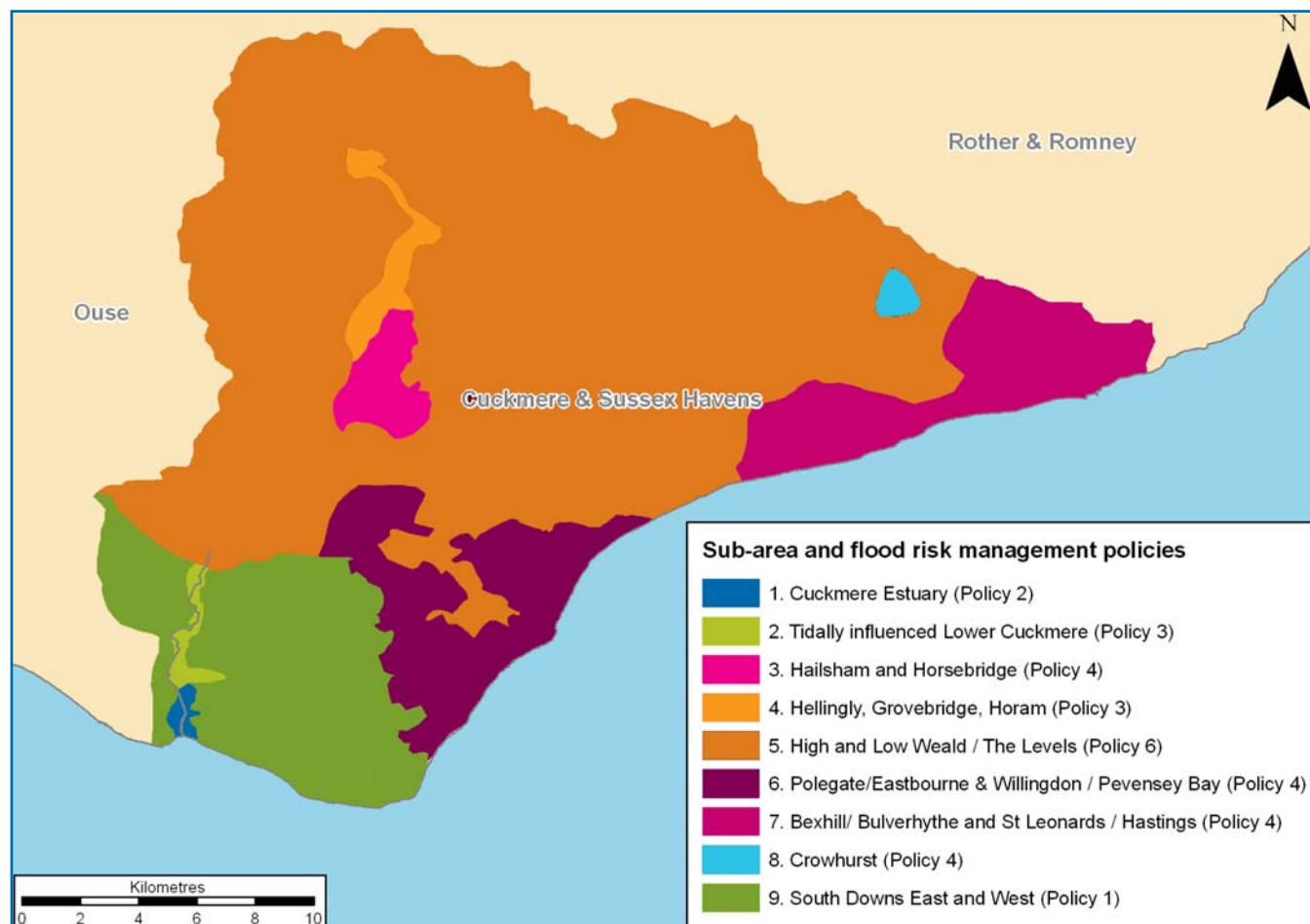


Table 4. Policy options.

→ 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.

Cuckmere Estuary

Our key partners are:

Lewes District Council

Wealden District Council

Cuckmere Estuary Partnership

The issues in this sub-area

Currently there are no properties at risk of flooding from the 1% annual probability (1 in 100 year) flood event. Flooding of the A259 occurs at Exceat Bridge in the north of sub-area. Some moderate grade agricultural land (Grades 3 and 4) is at risk of fluvial flooding. There are opportunities to increase the use of the estuary floodplain, where increased areas of flooding may help extend and/or create riverine habitats such as wetlands, whilst enhancing the nature conservation value of existing river systems.

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 scale of present and future flood risk indicates that current flood risk management cannot be economically justified.

The key messages

The current level of flood risk is low. Sea level rise will increase the frequency of flooding in the future, however the consequence of the flooding will remain low.

The current defences will not protect the area from flooding in the future and would need considerable expenditure to maintain or improve the standard of protection.

There are opportunities to improve the environment in the estuary. This fits with a number of environmental action plans aimed at maintaining or improving the landscape character and ecological value of the area.

Proposed actions to implement the preferred approach:

- Complete the Cuckmere Estuary Strategy, which sets out options for managing current and future flood risk. A draft strategy has been produced, in which our recommendation is to stop maintaining the flood defences and allow the area to go back to being a tidal estuary.



↑ Flooding on agricultural land January 2008.

Lower Cuckmere

Our key partners are:

Wealden District Council

East Sussex County Council

Natural England

Impact of a 1% annual probability flood event

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

The issues in this sub-area

There are a small number of businesses and homes at risk from the 1% annual probability fluvial flood event. Flooding in Alfriston and Westdean has relatively low impact but poor drainage means flood waters linger for up to three weeks. Traffic and emergency access may be severely disrupted if the A259 or North Street and the High Street through Alfriston became flooded.

The vision and preferred policy

The current level of flood risk is managed to an appropriate level, so the policy selected is:

Policy Option 3 – areas of low to moderate flood risk where we are generally managing existing flood risk effectively.

The key messages

Although flooding is an issue in this part of the catchment, there is no direct threat to human life and we do not expect this to increase significantly in the future.

There are a number of existing flood risk management assets protecting built-up areas, which will continue to be maintained.

Actions in other areas of the catchment such as reducing run-off in the upper catchment will help to reduce the impact of future changes to the flooding regime of the Cuckmere.



↑ The Lower Cuckmere at Alfriston.

Proposed actions to implement the preferred approach:

- Complete a System Asset Management Plan (SAMP) to determine how existing flood defences will be managed.
- Develop and implement a Water Level Management Plan (WLMP) for the Seaford to Beachy Head Site of Special Scientific Interest (SSSI).
- Work with local authorities to complete a Surface Water Management Plan (SWMP) for Alfriston and Westdean.
- Work with local authorities and landowners to investigate opportunities to set back current flood embankments.

Hailsham and Horsebridge

Our key partners are:

Wealden District Council

Southern Water

Natural England

The issues in this sub-area

There are significant problems associated with surface water flooding, coming from under-capacity of the local drainage system in Hailsham and/or blockages within culverts or drains from debris or siltation. Possible future development in the area is likely to put further pressure on existing drainage systems, drains and culverts which are currently insufficient in times of heavy rainfall. Increased coverage of land with hard surfaces such as pavements and driveways means that run-off into local streams is likely to increase.

Some fluvial flooding is caused from water backing up at the confluence with Bull River in Lower Horsebridge, however, only around five residential properties here are at risk from a 1% annual probability flood event, which also affects important roads including the A22, A267 and A271.

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	15	20

The vision and preferred policy

Although current flood risk is low, it is expected to increase in the future, therefore the chosen policy is:

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

The greatest risk to people and property in this sub-area is from surface water flooding due to the drainage network being overwhelmed during heavy rainfall. This is likely to increase in future if steps are not taken to reduce the effects of climate change and future development.

The current level of expenditure on flood risk management in the area is relatively low. With increasing pressure from future change, it is justifiable to increase the level of activity within the area to prevent an increase in flood risk.

Proposed actions to implement the preferred approach:

- Complete a System Asset Management Plan (SAMP) to determine how existing flood defences will be managed.
- Work with Wealden District Council to influence spatial development with the aims of ensuring no net increase in run-off from new developments (including the use of Sustainable urban Drainage Systems (SuDS)) and to ensure adequate foul and surface water infrastructure is available before new development.
- Work with Wealden District Council and the water companies to develop a Surface Water Management Plan (SWMP), with review of receiving watercourses/catchments, foul and surface water, and consider the effects of climate change.



Flood waters at Horsebridge February 2007. →

Hellingly, Grovebridge and Horam

Our key partners are:

Wealden District Council

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	9	9

The issues in this sub-area

Nine residential properties, some locally important B roads and the A267 west of Hellingly village are at risk from a 1% annual probability flood event.

The vision and preferred policy

The current level of flood risk is managed to an appropriate level so the selected policy is:

Policy Option 3 – areas of low to moderate flood risk where we are generally managing existing flood risk effectively.

The key messages

A significant level of flood risk management is currently carried out in this area to maintain river channels and structures and to ensure the channel flows freely. Flood risk is currently managed at a level appropriate to the scale of risk.

Flood frequency may increase slightly in the future as a result of climate change. The impact of this could be reduced by increasing flooding in appropriate areas upstream.

Proposed actions to implement the preferred approach:

- Complete System Asset Management Plan (SAMP) with an aim of maintaining existing level of maintenance while looking for efficiencies and improvements
- Improve flood warning service to properties in Hellingly and Lower Horsebridge by using telemetry on Bull River.
- Investigate local improvement schemes to increase usage of flood plain while ensuring that the likelihood of localised property flooding in area is not increased .



← Flooding on agricultural land January 2008.

High and Low Weald and The Levels

Our key partners are:

Wealden District Council

Rother District Council

Hastings Borough Council

National Farmers Union

Natural England

Southern Water

Eastbourne Borough Council

Eastbourne Working Group

Pevensy Levels Working Group

The issues in this sub-area

The Levels are drained by a large number of heavily modified river channels and many interconnected artificial drainage channels which transfer water relatively quickly towards the coast. Impermeable alluvial soils become waterlogged for much of the year and can prevent floodwaters from dispersing quickly. Fluvial flooding of Pevensy Levels and Langney Haven is mostly of agricultural land. Tide-locking of outfalls can cause water to back up and over-spill embankments.

Drainage and run-off from the Low Weald has an influence on flood risk in downstream parts of the Cuckmere River. However, opportunities exist to reduce flood

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	18	19

risk across the whole CFMP area by changing the way the land is used in the High Weald.

The vision and preferred policy

Risk to property is very low and the main focus of the area is the SSSI/Ramsar site which we manage with a view to enhancing. The chosen policy is:

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 current risk to human life and property is low. Flood risk throughout the CFMP area could be reduced by increasing flooding in low risk upstream areas, thereby potentially reducing the rate at which floodwaters move downstream to larger urban areas.

Increased flooding in this sub-area could have a positive effect on biodiversity, would increase the sustainability of flood risk management and would provide opportunities to enhance landscapes and improve recreation and amenity value.

Emphasis would be placed on making the public better understand the risk of flooding and climate change; encouraging close partnership with local communities and rural development authorities; and building policy objectives into planning documents.

Existing flood risk management (use of pumps and drainage channels) also limits the amount of natural wetland habitats. Increased flooding, whether freshwater, tidal or a combination of both could offer localised environmental benefits and would act as floodwater storage areas in the same way that the artificial drains do now.

Proposed actions to implement the preferred approach:

- Complete a System Asset Management Plan (SAMP) to determine how existing flood defences will be managed.
- Work with Natural England and other partners to develop a strategy plan to look at river restoration and naturalisation, with the objectives of reducing run-off and contributing to wider catchment benefits (biodiversity, soil conservation and water quality improvements).
- Encourage sustainable land use practices to reduce run-off rates from agricultural land, working with landowners, such as entry level stewardship programmes. This should encourage increasing forest cover and changes in farming practices.
- Work with Wealden District Council and Rother District Council to influence spatial development with the aims of ensuring no net increase in run-off from new developments.
- Work with Wealden District Council and the water companies to develop a Surface Water Management Plan (SWMP) for Heathfield to review capacity and vulnerability of groundwater, soil percolation, watercourses, foul and surface water sewers and consider the effects of new development.
- Develop fully integrated Water Level Management Plan with linked Eastbourne Park Management Plan and the Eastbourne Park Water Level Management Plan which covers the area of this sub-area south of the A27.
- Prepare a fluvial study linked to the Water Level Management Plan looking at the options for, and feasibility of, river restoration and naturalised drainage through the Levels including water level management and appropriate agricultural land management.
- Support England Catchment Sensitive Farming Initiative.
- Continue Pevensey outfalls study to assess the effectiveness of the sea outfalls in the area.



← Pevensey Levels.

Polegate/Eastbourne and Willingdon/Pevensley

Our key partners are:

Eastbourne Borough Council

Wealden District Council

Highways Agency

East Sussex County Council

Southern Water

The issues in this sub-area

Polegate is likely to see significant urban development over the next 10-15 years. Together with the effects of climate change, this development is likely to increase the level of flood risk above existing levels.

Surface water and groundwater flooding are a problem in Willingdon. This is caused in part by run-off from the South Downs and by long lengths of culverted watercourses, which are of insufficient size and in poor condition.

Flood risk in Pevensley Bay is mainly from the overloading of the drainage network, exacerbated by tidal-locking. Surface water drains can be affected when high tides prevent them from draining water effectively. Tide-locking of outfalls at Pevensley Bay can cause water in the river to back up and over-spill its banks.

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	169	230

The vision and preferred policy

Although current flood risk is low, it is expected to increase in the future, therefore the chosen policy is:

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

Existing flood risk is from a combination of fluvial, surface water and urban drainage problems due mainly to constricted culverts and channel blockages.

The current drainage system is at full capacity. Any increase in run-off is likely to lead to more frequent and deeper flooding. The consequences of increased flooding (due to climate change, rises in sea level or changes in the way land is used) would be unacceptable here in low-lying settlements and we will need to take further action to reduce this risk in the future.



↑ Culverted watercourse in Polegate.

← Sluice at Pevensley.

Proposed actions to implement the preferred approach:

- Complete System Asset Management Plans (SAMPs) to determine how existing flood defences will be managed and including feasibility of local improvement schemes to deal with specific drainage issues.
- Work with Wealden District Council and Eastbourne Borough Council to influence spatial development with the aims of ensuring no net increase in run-off from new developments and to encourage the use of Sustainable urban Drainage Systems (SuDS) in all new developments that do not contribute to the public sewer system.
- Develop a Surface Water Management Plan (SWMP) to address the effects of climate change and development.
- Investigate flow restrictions and set up a programme to make sure the channel has sufficient capacity.
- Complete Eastbourne Park flood storage scheme. This includes development of Eastbourne Park Management Plan and Eastbourne Park Water Level Management Plan.
- Continue Pevensey outfalls study to assess the effectiveness of the sea outfalls in the area.



↑ Eastbourne.

Bexhill/Bulverhythe and St Leonards/Hastings

Our key partners are:

Rother District Council

East Sussex County Council

Highways Agency

Southern Water

The issues in this sub-area

There is flood risk in this sub-area due to poor surface water drainage and occasional blockages within culverts or drains from debris or siltation. Surface water drains can be affected when high tides prevent them from draining water effectively. Groundwater seeping from sandstone formations around Bexhill into the local gravel beds can result in high groundwater levels. This high water table can be pushed higher still by the tide, resulting in complex flooding in low-lying parts.



Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	5	10

The vision and preferred policy

The main risk in this sub-area is from surface water flooding. Although managed at an appropriate level at present, the risk is expected to worsen with climate change so the chosen policy is:

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

Surface water flooding is the greatest concern in this sub-area, and due to its complex nature, is difficult to deal with. Further increases in the frequency of surface water flooding expected through climate change would threaten the economic development of the area. Further action will be needed in the future to reduce the impacts of climate change, rises in sea level and future development.



↑ Seafront outfalls at Bexhill (left) and Bulverhythe (right).

Proposed actions to implement the preferred approach:

- Complete System Asset Management Plans (SAMPs) to determine how existing flood defences will be managed.
- Work with Rother District Council and the water companies to develop a Surface Water Management Plan (SWMP) for Bexhill and Hastings.
- Work with Rother District, Hastings Borough Council and East Sussex County Council and the Highways Agency to identify local restrictions to flows and ensure adequate channel capacity.
- Work with Rother District and Hastings Borough Council to influence spatial planning, providing advice on methods to reduce run-off and implementation of Sustainable urban Drainage Systems (SuDS) in all new developments.
- Complete flood mapping study for high risk watercourses in Bexhill and Hastings.
- Appraise and review how climate change will alter the effectiveness of the sea outfall at Egerton Park.
- Look at the feasibility and seek implementation of local improvements or schemes to better manage flood risk north of the A259.
- Appraise and review the capacity of Combe Haven sea outfall to adapt to the effects of climate change.



↑ Hastings Old Town.

Crowhurst

Our key partners are:

Rother District Council

East Sussex County Council

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	1	1

The issues in this sub-area

There are fewer than 20 residential properties at risk from a 1% probability event, furthermore there is some flood risk from surface run-off from the steep upper reaches of Combe Haven in the High Weald. Restrictions to flow in the channels, such as at the points where two roads cross, contribute to flood risk.

The vision and preferred policy

The main risk in this sub-area is from surface water flooding. Although managed at an appropriate level at present, the risk is expected to worsen with climate change so the chosen policy is:

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

Although the current level of investment in flood risk management is appropriate, it could be more efficient if alternative options were used. Flood risk in the sub-area is expected to worsen with climate change, meaning that further action will need to be taken in future.

Changes in the way land is used in the High Weald sub-area (particularly increased woodland) can have a significant effect on reducing flood risk in this sub-area.



↑ Watercourse through Crowhurst.

Proposed actions to implement the preferred approach:

- Complete a System Asset Management Plan (SAMP) to determine how existing flood defences will be managed.
- Work with Rother District Council to encourage methods to reduce run-off and implementation of Sustainable urban Drainage Systems (SuDS) in all new developments.
- Implement a study for a local scheme to improve the ability of the channel to move floodwater through Crowhurst, or to identify specific ways of holding floodwater for longer upstream in the High Weald.

The South Downs (East and West)

Our key partners are:

Lewes District Council

Wealden District Council

Eastbourne Borough Council

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	1	1

The issues in this sub-area

There are no rivers in this sparsely populated chalk downland sub-area, so no properties are at risk from river flooding. There is a chance of surface water run-off across the South Downs, however no residential property is affected in these sparsely populated sub-areas. Agricultural land is at risk of soil erosion.

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

There are no existing flood risk management activities here.

Proposed actions to implement the preferred approach:

- Continue to monitor and advise.



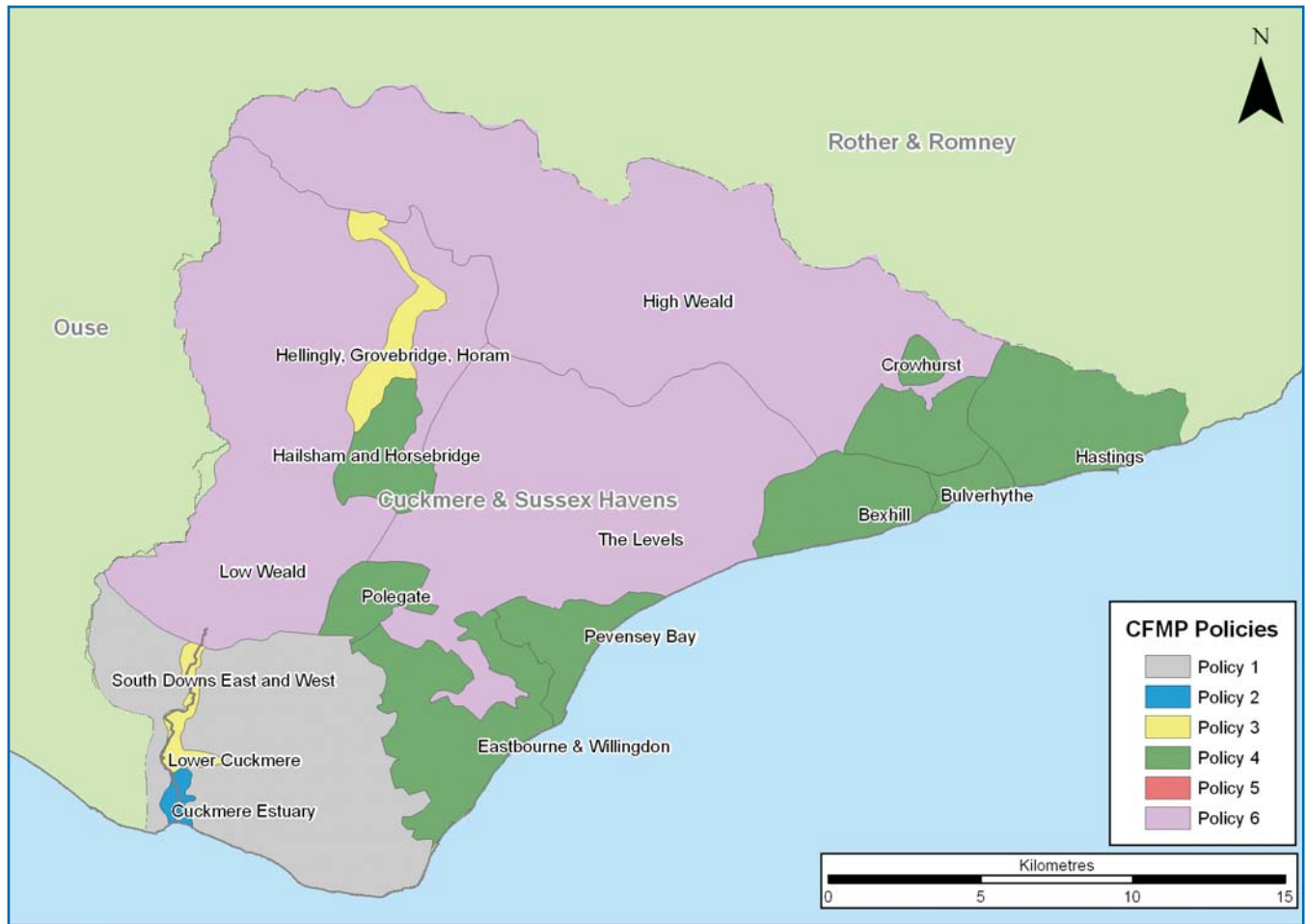
↑ The South Downs at Wilmington.



↑ The South Downs.

Map of CFMP policies

Map of the policies in the Cuckmere and Sussex Havens catchment.



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