Environment Agency

Frome and Piddle Catchment Flood Management Plan

Summary Report June 2012

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Introduction

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

The Frome and Piddle 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, ground water, 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 ground water 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 Frome and Piddle catchment has a history of flood risk. Over the last 40 years engineering schemes have been implemented to reduce flood risk in the catchment. At present 1,160 properties are at risk in the catchment in a 1% event (taking into account flood defences). This is likely to increase to over 1,490 properties in the future.

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 manage flood risk in the future. We have worked with others including: Poole Borough Council; Dorset County Council, and Natural England and the National Farmers Union to develop this plan.

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 South West Region.

Richard Cresswell
South West Regional Director

Contents

The purpose of a CFMP in managing flood risk

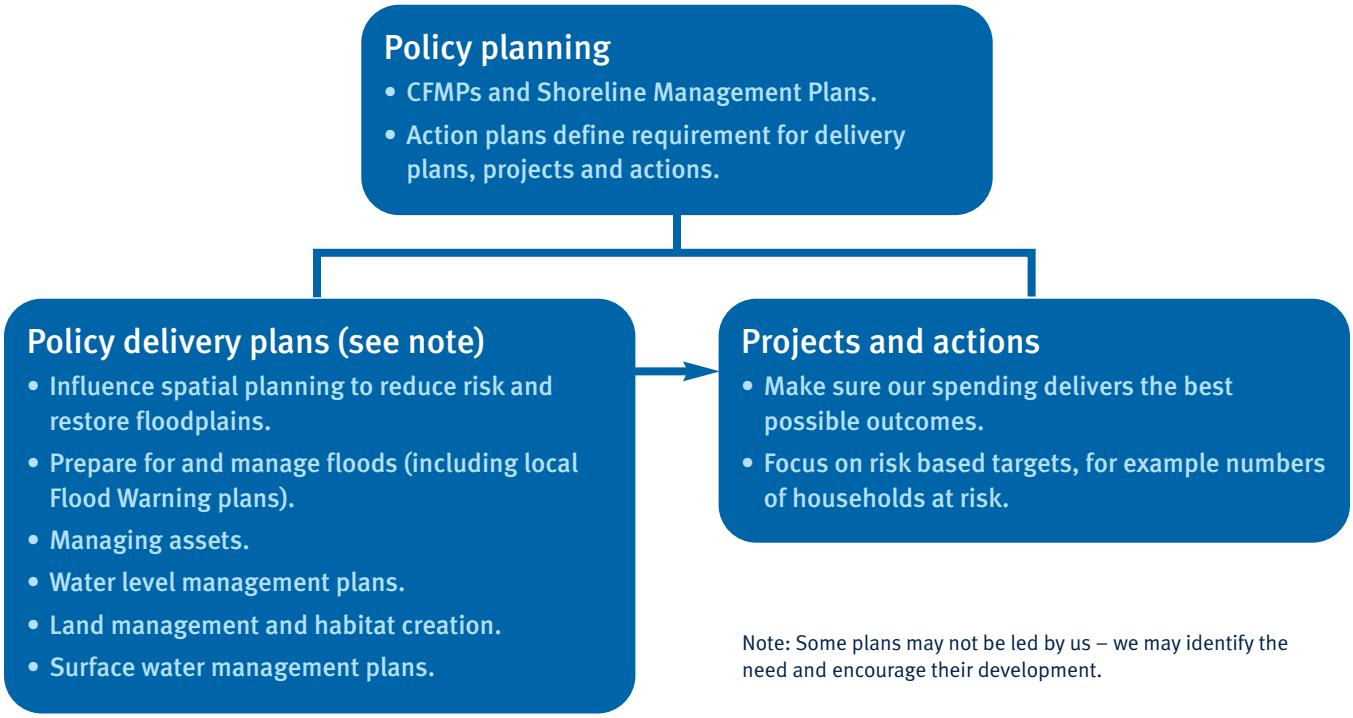
CFMPs help us to understand the scale and extent of flooding now and in the future, and set policies for managing flood risk within the catchment. CFMPs should be used to inform planning and decision making by key stakeholders such as:

- the Environment Agency, who will use the plan to guide decisions on investment in further plans, projects or actions;
- Regional Assemblies and local authorities who can use the plan to inform spatial planning activities and emergency planning;
- Internal Drainage Boards (IDB), 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 catchment of the rivers in the Frome and Piddle CFMP are located in the south west of England. They drain from the North Dorset Downs, flowing through Dorset to outfall into Poole Harbour. Map 1 shows the location and extent of the Frome and Piddle CFMP area. It includes the rivers Frome and Piddle and their tributaries, and shorter rivers draining to Poole Harbour and Swanage.

The downstream limit of the CFMP area meets with the upstream boundary of the Poole and Christchurch Bay Shoreline Management Plan (SMP) boundary at Holmebridge on the Frome, and at Wareham on the Piddle. The Poole and Christchurch Bay SMP deals with coastal flood management, while the CFMP considers the risk from tidal flooding.

The overall catchment area is about 900 square kilometres, and has a population of around 170,000. Except for the urban conglomeration of Poole, it is a rural catchment, with urban areas making up only two per cent of the total. The other main urban areas include Dorchester, Wareham and Swanage.

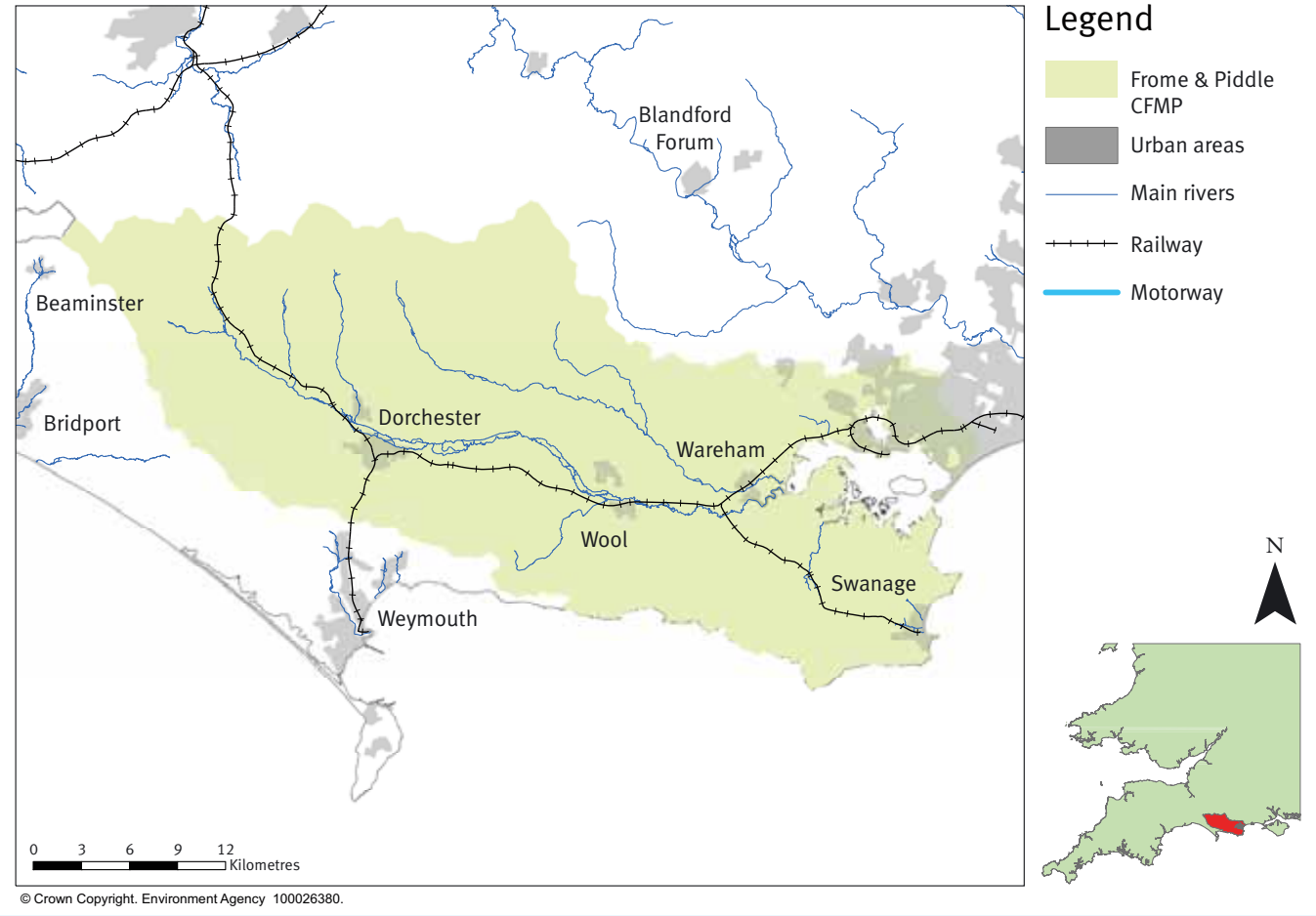
The Frome and Piddle catchment is characterised in the upper reaches of the North Dorset Downs by open chalk downland with steep scarp slopes, sheltered valleys, chalk hills, ridges and limestone plateaux, leading to flat-bottomed open valleys with clay and alluvial deposits at the lower end. The rivers Frome and Piddle discharge into Poole Harbour at sea level just downstream of Wareham. The steep slopes at the top of the catchment lead to fast run-off responses to rainfall events. As gradients slacken and valleys broaden through the catchment, there is a more gradual response to run-off. The upper area of the catchment is underlain by chalk geology up to 300m thick, which readily absorbs rainfall and transmits it to the groundwater supplies, which in turn support spring and river flows. This chalk aquifer is used for public water supply. The middle and lower areas of the catchment are overlain by up to 100m of mixed geology including clays that, in contrast to the chalk, do not readily absorb water allowing it to remain on the surface before discharging into the rivers. The large low-lying wetland areas around Poole Harbour, the site of important habitats, provide attenuation locally.

The underlying geology of a catchment also influences groundwater flows and in this catchment the groundwater flow regime is relatively complex. The water under the ground and water in rivers and streams interact and flooding can be caused by either source or a combination of both. Flood risk will be greatest when the groundwater system is at maximum capacity. Groundwater is forced to the surface through springs and fissures. This may cause groundwater flooding locally in the upper area, in the middle area where low topography meets the chalk and at fault and fold lines in the lower area. It may also increase flooding across the whole catchment by increasing the baseflow of watercourses.

The Frome and Piddle CFMP area is situated within the Dorset Area of Outstanding Natural Beauty (AONB) and falls within seven of Natural England's Landscape Character areas. Almost half of the CFMP area is within the Dorset Downs and Cranbourne Chase Character Area. This is a rolling chalk landscape with dramatic scarps and steep sided valleys, supporting rich and diverse grassland habitats and it includes prehistoric features. Another third of the CFMP area is in the Dorset Heaths Character Area, an open and broad landscape with a variety of heathland, farmland, woodland and scrub.

Important environmental sites in the catchment include six Special Areas of Conservation (SAC), Poole Harbour and Dorset Heathlands Ramsar and Special Protection Area (SPA), 57 Sites of Special Scientific Interest (SSSI) (including the River Frome SSSI), six National Nature Reserves and 900 Scheduled Monuments.

Map 1. Location and extent of the Frome and Piddle CFMP area



↑ A milkman walks along a wall top through floods from the River Frome at Lower Burton July 1955

Current and future flood risk

Overview of the current flood risk

Flood risk has two components: the chance (probability) of a particular flood and the impact (or consequence) that the flood would have if it happened. The probability of a flood relates to the likelihood of a flood of that size occurring within a one year period. It is expressed as a percentage. For example, a 1% flood has a 1% chance or 0.01 probability of occurring in any one year, and a 0.5% flood has a 0.5% chance or 0.005 probability of occurring in any one year. The flood risks quoted in this report are those that take account of flood defences already in place.

This catchment has a long history of flooding, the most significant event in recent years occurred in Piddletrenthide, Maiden Newton, Sydling St Nicholas and other hamlets in October 2000 to January 2001 when 90 properties and two caravan parks were affected by groundwater, surface water and river flooding after periods of heavy rainfall.

Currently the main sources of flood risk for people, property, infrastructure and the land are:

- river flooding from the River Frome in Dorchester and Maiden Newton, River Piddle in Wareham, River Carne in Cerne Abbas, and River Swan in Swanage;
- tidal flooding in Wareham and Swanage;
- surface water drainage flooding, which has occurred in Frampton, Swanage and Wareham. Other towns have the potential to be at risk from surface water flooding;
- Groundwater flooding which has occurred in Milborne St Andrew, Cerne Abbas, Dorchester and other isolated locations throughout the catchment.

What is at risk?

At present there are around 1,900 people and 1,160 commercial and residential properties at risk in the whole catchment from a 1% annual probability river flood taking into account current flood defences.

This means that 1% of the total population living in the catchment are currently at risk from flooding.

It is difficult to assess the current impact of flooding to environmental features. Designated sites at risk would not actually be damaged by the inundation.

Twelve Scheduled Monuments are at risk of flooding, these being mostly bridges. The actual risk of damage from flooding is limited.

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

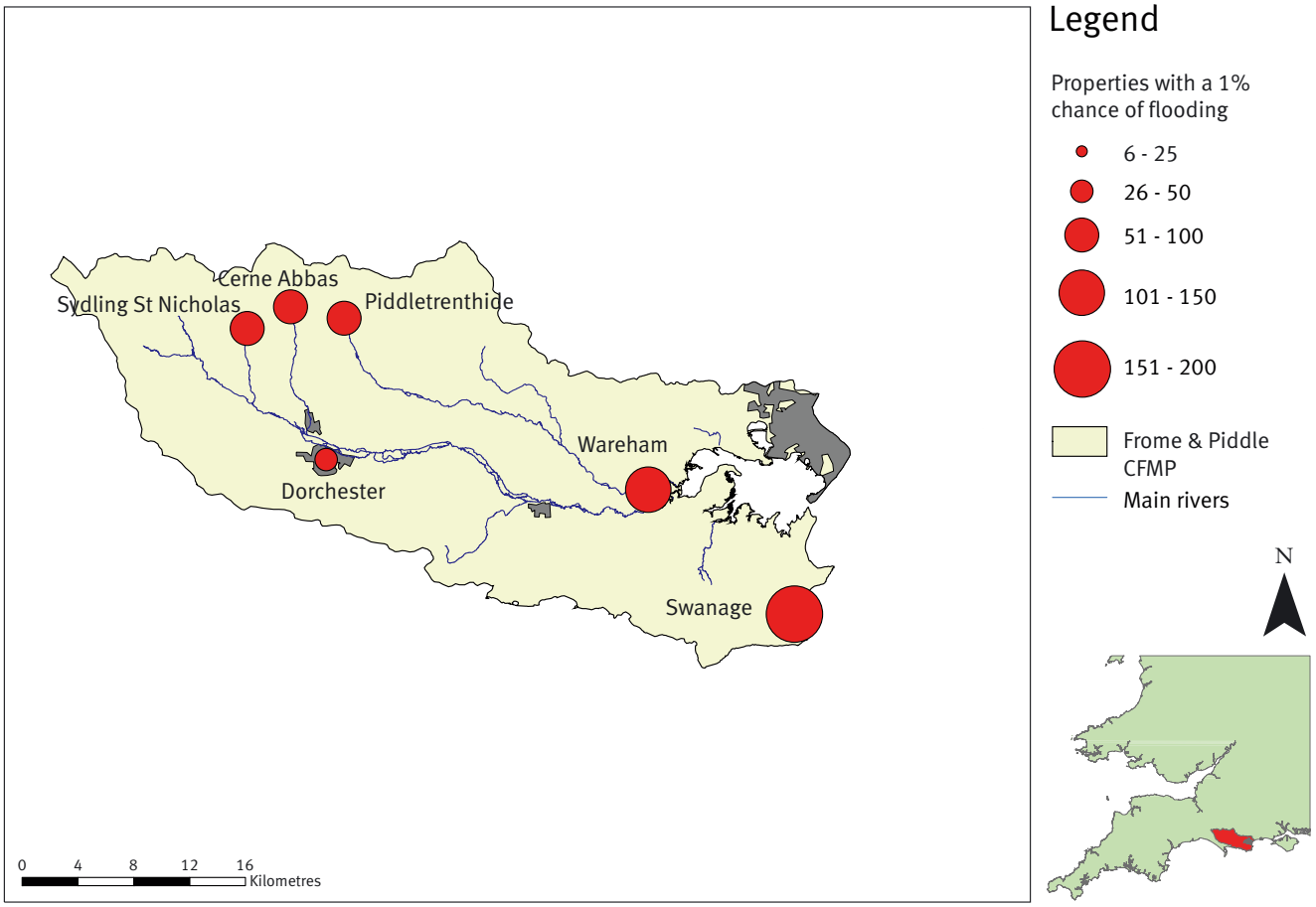


Table 1. Locations of towns and villages with 25 or more properties at risk in a 1% annual probability river flood

Number of properties at risk	Locations
100 to 500	Swanage, Wareham
50 to 100	Dorcester, Cerne Abbas, Piddletrenthide, Sydling St Nicholas
25 to 50	Maiden Newton, Milborne St Andrew

Table 2. Critical infrastructure at risk:

4 water treatment works, 1 healthcare centre, 9km main roads, 7.5km mainline railways, 1 school

Where is the risk?

More than 10% of the people and properties that are at risk within the catchment from a 1% annual probability river flood are located in Swanage. A further 6% are located in Wareham.

The distribution of properties at risk from a 1% annual probability river flood, is illustrated in Map 2. Table 1 summarises where there is flood risk to more than 25 properties. We recognise that there is also a potential risk from surface water and groundwater flooding. However, further studies following on from the CFMP are needed by us and our partners to quantify this potential risk.

How we currently manage the risk

The catchment has a history of flood risk, generally due to the high rainfall that can lead to extensive flooding of the river valleys, and prolonged wet periods that can lead to groundwater flooding. Over the last 40 years, engineering schemes have been implemented to reduce flood risk in the catchment, including:

- building a flood relief culvert in conjunction with flood storage reservoirs on the River Swan at Swanage. This provides protection up to a 1% annual probability river flood. The building of a flood bypass culvert on the River Piddle at Piddletrenthide provides protection up to a 4% annual probability river flood;
- building a flood bypass channel on the River Frome at Maiden Newton that provides protection up to a 1.3% annual probability river flood;
- widening, straightening of channels on the Sydling Water at Sydling St Nicholas provides protection up to a 1% annual probability river flood.

These measures have all reduced flood risk.

In addition to these engineering schemes, other flood risk management activities are carried out in the catchment. These include activities which help to reduce the probability of flooding and those that address the consequences of flooding.

Activities that reduce the probability of flooding include:

- maintaining and improving existing flood defences and structures, including installing a new tilting gate at Hangmans Weir in Dorchester;
- maintaining river channels;
- maintenance of road drainage and sewers;
- working with local authorities to influence the location, layout and design of new and redeveloped property and ensuring that only appropriate development is allowed on the floodplain through the application of Planning Policy Statement 25 (PPS25).

Activities that reduce the consequences of flooding include:

- understanding where flooding is likely by using flood risk mapping;
- providing flood forecasting and warning services;
- promoting awareness of flooding so that organisations, communities and individuals are aware of the risk and are prepared in case they need to take action in time of flood;
- promoting resilience and resistance measures for those properties already in the floodplain.

The impact of climate change and future flood risk

In the future, flooding will be influenced by climate change, changes in land use (for example urban development) and rural land management. In the Frome and Piddle catchment, climate change will have the greatest impact on flood risk. The following future scenario for climate change was used in the CFMP:

- 20% increase in peak flow in all watercourses. This will increase the probability of large-scale flood events;
- a total sea level rise of 500 mm by the year 2100. This will increase the risk of flooding at Wareham and Swanage.

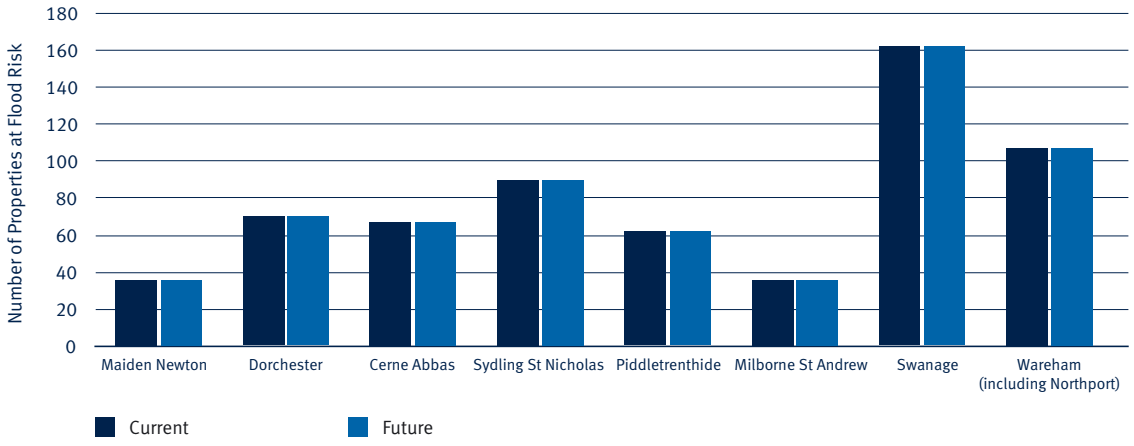
Using river models we estimate that by 2100, around 2,500 people and 1,500 properties across the catchment may be at risk from a 1% annual probability flood. Flood risk from rivers increases mainly in Dorchester, Wareham and Swanage.

The sensitivity testing undertaken showed that within the CFMP area river flooding is not sensitive to changes in urban development and that future land use management is likely to bring benefits for flood risk management. The river flooding in the lower part of the area is very sensitive to sea level rise. Greater flows due to increased rainfall and storminess are shown to be significant, increasing economic damage costs and properties affected.

Figure 2 shows the difference between current and future flood risks from a 1% annual probability river flood at key locations in the catchment. Following on from the CFMP, organisations need to work together to investigate flood risk from other sources (e.g. surface water and ground water flooding) in more detail.

In general, it is unlikely that the impact of flooding on environmental sites will change significantly in the future.

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



Future direction for flood risk management

Approaches in each sub-area

We have divided the Frome and Piddle 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.

↑ A road at East Burton near Dorchester affected by flooding from the River Frome in May 1979

Map 3. Frome and Piddle sub-areas

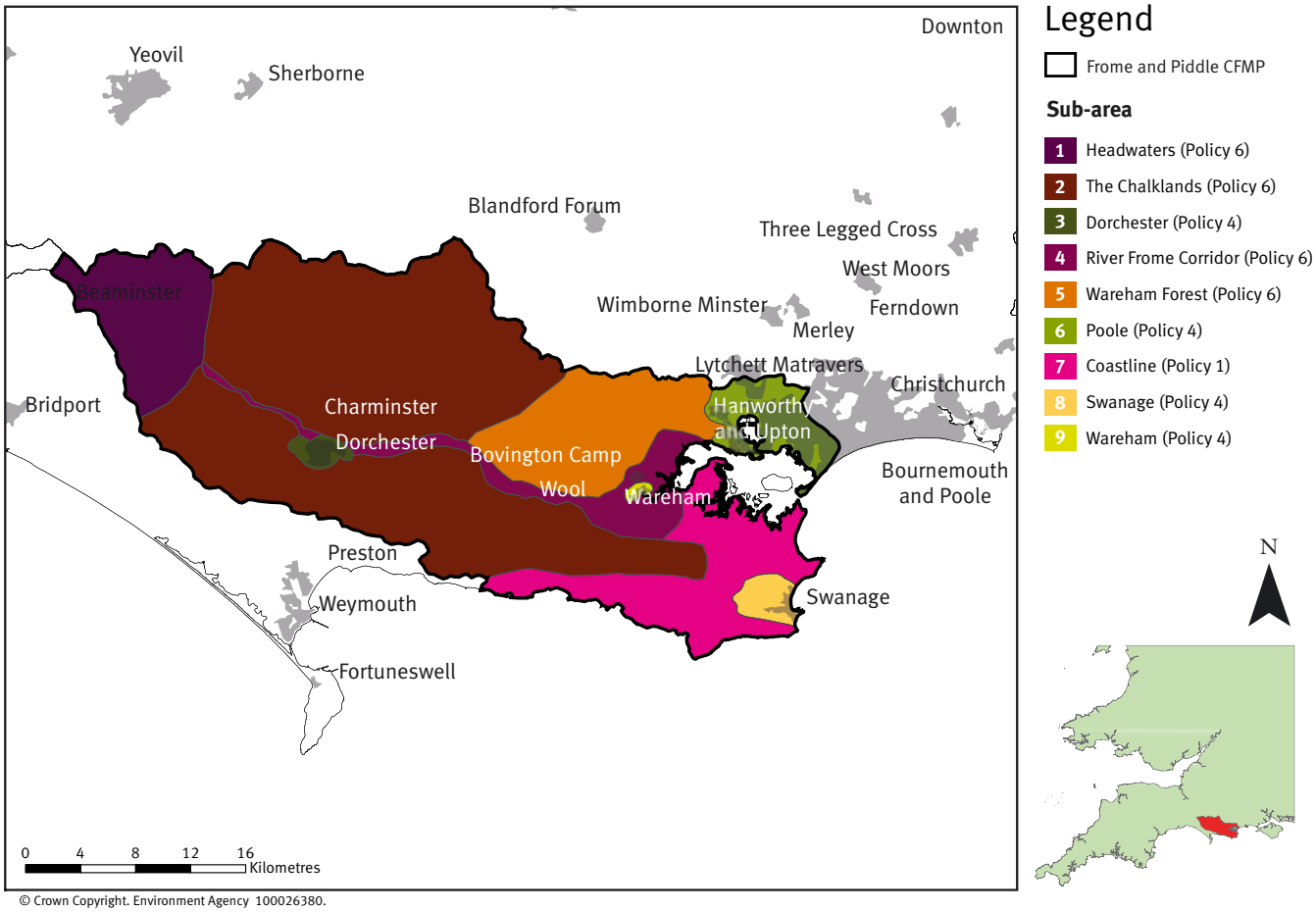


Table 3. Policy options

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.

Headwaters

Our key partners are:

- West Dorset District Council
- Dorset County Council
- Natural England
- Wessex Water
- National Farmers Union
- Land managers
- Farming and Wildlife Advisory Group

The issues in this sub-area

This sub-area is essentially rural with a small population containing few small hamlets and farms. The main risk is from river flooding from the headwaters of the River Frome and Hooke especially at the confluence in Maiden Newton.

It is a steep, high moorland landscape, featuring incised valleys which suffer from surface water run-off from the Dorset Downs via overland flow.

Currently there are approximately 45 properties at risk in the 1% annual probability flood extent. This is expected to remain the same in the future 1% annual probability flood extent.

The vision and preferred policy

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

Currently flood risk in this sub-area is considered to be managed to an appropriate level. The main future flood risk is expected to be that of surface water flooding. By implementing this policy, risk would be moderately reduced and bring environmental gains in this sub-area and in Dorchester and the River Frome Corridor.

Proposed actions to implement the preferred policy

- Investigate the flood risk management opportunities arising from the Catchment Sensitive Farming initiative and Environmental Stewardship schemes and act to ensure they are realised.
- Investigate the potential flood risk management benefits of the Area of Outstanding Natural Beauty tree and woodland planting programme and act to ensure that any opportunities are realised.
- Identify locations for wetland habitat creation that could have clear flood risk management benefits and carry out feasibility studies for implementation.
- Identify specific locations and devise schemes where watercourses and floodplains can be restored by reducing conveyance where appropriate, reducing incidents of tree clearance in the river corridor (where such features do not increase the flood risk) and removing or altering obstructions such as road and foot bridges and implement findings.

↑ A flood gauge board surrounded by the swollen River Frome at Maiden Newton in January 2004.

Sub-area 2

The Chalklands

Our key partners are:

- West Dorset District Council
- North Dorset District Council
- Purbeck District Council
- Dorset County Council
- Natural England
- Wessex Water
- National Farmers Union
- Land managers
- Farming and Wildlife Advisory Group
- Wildlife Trust

The issues in this sub-area

This sub-area is steep, featuring incised valleys and contains settlements and farms scattered throughout. Flooding occurs from the headwaters of the Sydling Water, River Cerne and River Piddle, and from surface water run-off from the Dorset Downs.

It has a chalk dominated permeable geology resulting in groundwater flooding from rising springs, chalk bed river flooding and artesian flows. There is also some impermeable clay in the east.

Risk comes from river flooding from the head waters of the River Win and Winterbourne and the Corfe Stream and groundwater flooding from rising springs, chalk bed river flooding and artesian flows.

This sub-area contains several prominent towns and villages, as well as smaller isolated settlements and individual houses, or farm buildings, a number of which are located in the bottom of incised river valleys, or in the floodplain of the watercourses making them vulnerable. Currently approximately 470 properties are in the 1% annual probability flood extent. This is expected to increase to approximately 600 properties in the future 1% annual probability flood extent.

The vision and preferred policy

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

Flood risk in this sub-area is set to increase in the long term. However, changes in land use and practices would alleviate flood risk, bringing economic and social benefits. Restoration measures would also alleviate flood risk whilst bringing environmental benefits.

It is considered that as groundwater flooding may decrease but river and surface water flooding are likely to increase in the longer term, this is the most appropriate way of managing that risk.

The risk would be moderately reduced and bring environmental gains in this sub-area and in Dorchester, the River Frome corridor and Wareham Forest.

Proposed actions to implement the preferred policy

- Investigate the flood risk management opportunities arising from the Catchment Sensitive Farming initiative and Environmental Stewardship schemes and act to ensure they are realised.
- Investigate the potential flood risk management benefits of the Area of Outstanding Natural Beauty tree and woodland planting programme and act to ensure that any opportunities are realised, whilst considering the effects on Sites of Special Scientific Interest (SSSIs).
- Undertake an investigation of the restoration of water meadows on the Sydling Water and Winterbournes to regulate flows, ensuring that any effects on the SSSIs are considered.
- Restore water meadows in accordance with findings of the investigation.
- Identify specific locations and devise schemes where watercourses and floodplains can be restored to their naturally functioning state, reducing conveyance where appropriate, reducing incidents of tree clearance in the river corridor (where such features do not increase the flood risk) and removing or altering obstructions such as road and foot bridges and implement findings.
- Undertake a study to assess effect of the changes to flooding on the environmentally designated sites and if necessary, devise and implement mitigation measures to protect them.
- Identify and survey infrastructure at risk and take measures to increase flood resilience.
- Investigate the impact of raised groundwater and springs on the urban areas of Cerne Abbas, Sydling St Nicholas, Charminster, Milborne St Andrew and the Piddle villages and establish baseline information on damages, and consider feasibility of mitigation measures.

↑ Southern Chalklands

Dorchester

Our key partners are:

West Dorset District Council

Dorset County Council

Dorchester Town Council

Highways Agency

Network Rail

Wessex Water

The issues in this sub-area

Dorchester is one of the largest urban areas in the Frome and Piddle CFMP.

In the 1% annual probability flood event 75 properties are at risk from river flooding from the River Frome, Mill Stream and other smaller channels, groundwater rising as springs and artesian flows and surface water run-off, overland flow and urban drainage system incapacity. This is expected to increase to around 80 properties in the future 1% annual probability flood event.

Future development is planned within this sub-area.

Key transport infrastructure, such as the A35 and local roads are affected by flooding.

The vision and preferred policy

Policy Option 4 - we are already managing the flood risk effectively, but we may need to take further actions to keep pace with climate change.

Flood risk from river and surface water flooding in Dorchester is expected to increase in the long term due to climate change. By implementing this policy, damages and the number of people exposed to flooding do not increase. Dorchester has a high social vulnerability category and by applying this policy risk will not increase.

Proposed actions to implement the preferred policy

- Identify specific locations where channel maintenance is required to ensure conveyance is adequate and revise the maintenance regime where appropriate.
- Identify and survey infrastructure at risk and take measures to increase flood resilience.
- Improve the flood warning service and use awareness campaigns to increase the uptake of the service to local people and businesses in the vulnerable areas of Dorchester.
- Carry out a study to research historic surface water flooding events and to set up systems to measure and record all future surface water flooding events and impacts in order to establish baseline information and a monitoring programme.
- Develop an Integrated Urban Drainage strategy for Dorchester and implement actions.

River Frome Corridor

Our key partners are:

Purbeck District Council

West Dorset District Council

Dorset County Council

Natural England

Wildlife Trust

The Royal Society for the Protection of Birds

National Farmers Union

Land managers

Farming and Wildlife Advisory Group

The issues in this sub-area

This sub-area covers the floodplain of the River Frome and is essentially rural with a small population in East Stoke, Sandford, Holton Heath and isolated settlements within the River Frome corridor.

The risk is from flooding from the River Frome and Piddle combined with the tidal influence in the lower reaches. There is also the risk from flooding caused by overland flow containing silt from Bovington Camp.

Around 40 properties are currently at risk in the 1% annual probability flood event. The number of properties at risk in the future flood event is not likely to increase from from the current situation.

The vision and preferred policy

Policy Option 6 - we will take actions with others to store weather or manage run-off in locations that provide overall flood risk reduction or environmental benefits.

This policy would alleviate flood risk by enhancing and creating wetland habitats to attenuate floodwater and managing run-off more effectively. The risk of flooding would still increase in smaller and more vulnerable, low-lying communities nearer the coast due to the rise in sea level as a result of climate change. Targeted actions would be required to mitigate this.

Proposed actions to implement the preferred policy

- Use awareness campaigns to increase the uptake of the flood warning service to local people and businesses in the floodplain of the River Frome.
- Investigate the flood risk management opportunities arising from the Catchment Sensitive Farming initiative and Environmental Stewardship schemes and act to ensure they are realised.
- Identify actions contained in the River Frome Water Level Management Plan, which may be maximised for flood risk management benefits.
- Carry out a study to identify potential areas for wetland creation/ floodplain grazing marsh, ensuring that any effects on environmentally designated sites are considered and implement findings.
- Undertake a study to assess effect of changes to flooding on environmentally designated sites and if necessary, devise and implement mitigation measures to protect these sites.
- Survey, report on and mitigate the deterioration of historic environment assets due to flooding.

Wareham Forest

Our key partners are:

Purbeck District Council

Dorset County Council

Natural England

Wildlife Trust

Land managers

The issues in this sub-area

This sub-area is a relatively flat lowland landscape, with a significant amount of woodland cover. It features the lower reaches of the Piddle and a few minor watercourses. Around 20 properties are currently at risk in the 1% annual probability flood event. The number of properties at risk in the future event is not likely to increase from the current situation. The main sources of flooding are river flooding from the River Piddle and overland flow containing silt from Bovington Camp.

The vision and preferred policy

Policy Option 6 - we will take action with othersto store water or manage run-off in locations that provide overall flood risk reduction or environmental benefits.

By restoring wetlands and making changes in land uses and practices with regard to run-off would moderately reduce risk in some locations.

Proposed actions to implement the preferred policy

- Identify locations for wetland creation and carry out feasibility studies for implementation, ensuring that any effects on environmentally designated sites are considered.
- Investigate the potential flood risk management benefits of the Area of Outstanding Natural Beauty tree and woodland planting programme and act to ensure that any opportunities are realised, within the River Piddle floodplain, ensuring that any effects on environmentally designated sites are considered.
- Undertake a study to assess effect of changes to flooding on environmentally designated sites and if necessary, devise and implement mitigation measures to protect these sites.
- Investigate the flood risk management opportunities arising from the Catchment Sensitive Farming initiative and Environmental Stewardship schemes and act to ensure they are realised.

↑ Wareham Forest

Poole

Our key partners are:

East Dorset District Council

Purbeck District Council

Poole Unitary Council

Dorset County Council

Wessex Water

The issues in this sub-area

Poole is an urban sub-area with a very dense population and a significant coverage of impermeable surfaces.

It features a number of culverted watercourses that can cause surface water flooding due to low capacity and tidal locking.

Surface water flooding is known to affect residential properties and roads in Upton, which causes community distress and disruption to transport links. The number of properties affected has not yet been quantified. Surface water flooding is predicted to increase in the future as rainfall intensities increase.

The vision and preferred approach

Policy Option 4 - we are already managing the flood risk effectively, but we may need to take further action to keep pace with climate change.

Poole contains a significant amount of key services, commercial properties and infrastructure and is also an important employment centre. Flooding in Poole would have a significant impact on the local economy and even the economy of the county. In addition to this, it is considered that the people exposed to flooding are contained within a high social vulnerability category. Policy 4, where surface water flooding is sustainably managed using techniques such as Sustainable Drainage Systems, is the preferred option for Poole.

Proposed actions to implement the preferred policy

- Carry out a study to research historic surface water flooding events and to set up systems to measure and record all future surface water flooding events and impacts in order to establish baseline information and a monitoring programme.
- Undertake surface water management plans for Poole and within these investigate retrofitting appropriate drainage techniques and other measures to deal with tide locking issues and implement findings.

Sub-area 7

Coastline

Our key partners are:

Purbeck District Council

Dorset County Council

Local Parish Councils

Natural England

The Royal Society for the Protection of Birds

National Farmers Union

Land managers

Farming and Wildlife Advisory Group

The issues in this sub-area

This sub-area is essentially rural with a very small population containing a few small hamlets and farms. One property is currently at risk from river flooding from a small steep catchment. It is possible that future peak rainfall intensities will increase by up to 30% as more frequent events are experienced due to climate change, resulting in rapid run-off causing surface water and sheet run-off. The number of properties affected in the future has not yet been quantified.

The vision and preferred policy

Policy Option 2 - we can generally reduce existing flood risk management actions.

Currently no or very little maintenance is undertaken. This is the preferred approach as it retains the groundwater flood warning system.

Proposed actions to implement the preferred policy

- Carry out a study to determine the long-term effects of a reduction in flood risk management actions in this sub-area. If necessary, amend actions to mitigate adverse effects.

Swanage

Our key partners are:

Purbeck District Council

Dorset County Council

Swanage Town Council

Wessex Water

Land owners

The issues in this sub-area

This sub-area contains the small and very steep catchment of the Swan Brook and Ulwell Stream.

It is dominated by the settlement of Swanage, essentially urban with a very high population and significant amounts of impermeable surfaces.

Around 325 properties are currently at risk from river flooding from the Swan Brook, exacerbated by tidal influence and overland flow and urban drainage system incapacity. The number of properties at risk in the future 1% annual probability flood event is likely to increase to around 350.

The vision and preferred policy

Policy Option 4 - we are already managing the flood risk effectively but we may need to take further actions to keep pace with climate change.

Flood risk due to river and tidally influenced flooding and surface water in Swanage is expected to increase in the long term due to climate change.

Proposed actions to implement the preferred policy

- Use awareness campaigns to increase the uptake of the flood warning service to local people and businesses in Swanage.
- Carry out a study to research historic surface water flooding events and to set up systems to measure and record all future surface water flooding events and impacts in order to establish baseline information and a monitoring programme.
- Undertake surface water management plans for Swanage and within this investigate the upgrade of the current systems.
- Review culvert design and efficiency.
- Review the maintenance regime and flood risk management in and around Swanage to ensure it is appropriately targeted and revise as appropriate in order to prevent a future increase in flood risk in Swanage.

Wareham

Our key partners are:

Purbeck District Council

Dorset County Council

Natural England

Dorset Biodiversity Partnership

Wildlife Trust

The Royal Society for the Protection of Birds

Highways Agency

Network Rail

Wessex Water

The issues in this sub-area

This sub-area contains the town of Wareham (including Northport) and the very much smaller settlements of Stoborough, Stoborough Green and Ridge. A large part of the remainder of the sub-area is covered by the Poole Harbour Ramsar and Special Protection Area (SPA), the Dorset Heaths, Special Area of Conservation (SAC), and many Sites of Special Scientific Interest (SSSI).

The sub-area is predominantly lowland floodplain with the exception of Wareham, the old part of which is situated on high ground.

180 properties are currently at risk from river flooding from the Rivers Frome and Piddle combined with the tidal influence. This is likely to increase to around 250 properties in the furture

The vision and preferred policy

Policy Option 4 - we are already managing the flood risk effectively, but where we may need to take further actions to keep pace with climate change.

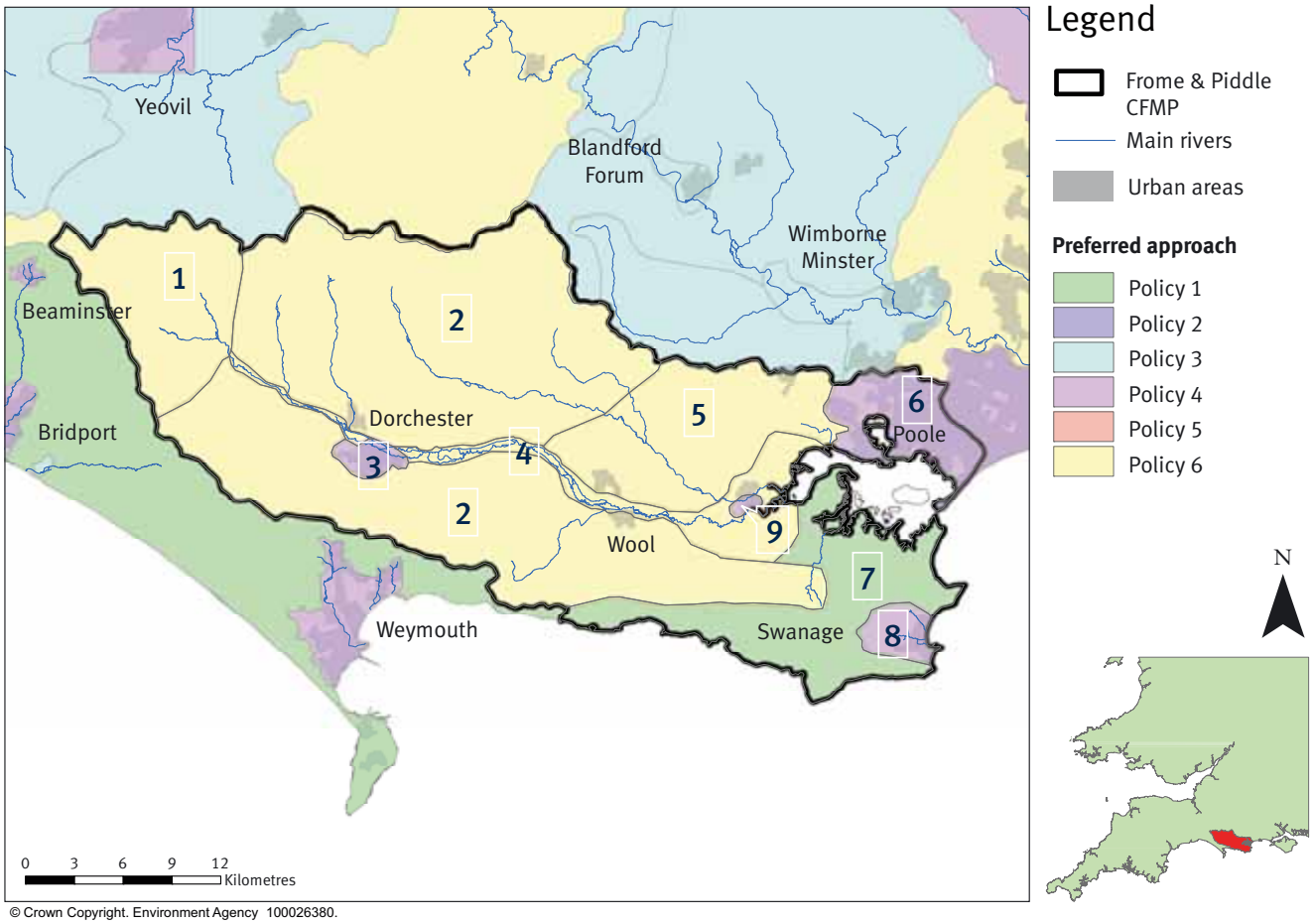
Flood risk from river and tidally influenced flooding in this sub-area is expected to increase in the long term due to climate change. By implementing this policy and improving on the current actions, economic damages and the number of people exposed to flooding do not increase.

Proposed actions to implement the preferred policy

- Undertake a study to understand possible future flooding in this sub-area. The purpose of the study is to assess the flood risk implications of all future strategy options for the Wareham Tidal Banks, to include increased river flows and sea level rise due to climate change.
- Input would also be required from those involved with the River Frome (and Wareham Meadows) Water Level Management Plan(s).
- Effects on environmentally designated sites must be considered.
- Review the CFMP policy selected in the light of the Wareham Tidal Banks strategy adopted and hence the likely future flood risk.
- Identify properties and locations at future flood risk and investigate the associated flood mechanisms.
- Assess and promote options for flood damage reduction.
- Discourage future re-development and intensification of development.
- Use awareness campaigns to increase the uptake of the flood warning service to local people and businesses in the floodplain around Wareham.
- Survey, report on and mitigate the deterioration of historic environment assets due to flooding in the future.
- Identify and survey infrastructure at future risk and take measures to increase flood resilience.

Map of CFMP policies

Map of the policies in the Frome and Piddle catchment



The sub-areas

1 Headwaters
2 The Chalklands
3 Dorchester
4 River Frome Corridor
5 Wareham Forest
6 Poole
7 Coastline
8 Swanage
9 Wareham

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