

Dorset Stour Catchment Flood Management Plan

Summary Report June 2012



managing
flood risk

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
Manley House
Kestrel Way
Exeter EX2 7LQ
Tel: 0870 8506506
Email: enquiries@environment-agency.gov.uk
www.environment-agency.gov.uk

© Environment Agency

All rights reserved. This document may be reproduced with prior permission of the Environment Agency.
June 2012

Introduction



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

The Dorset Stour 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 Dorset Stour catchment has a history of flood risk. Over the last 50 years engineering schemes have been implemented to reduce flood risk in the catchment. At present 780 properties are at risk in the catchment in a 1% event (taking into account flood defences). This is likely to increase to over 2,900 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: Dorset District Councils, Natural England, Wessex Water 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.

A handwritten signature in black ink that reads "R. Cresswell". The signature is written in a cursive style.

Richard Cresswell
South West Regional Director

Contents

The purpose of a CFMP in managing flood risk	3
Catchment overview	4
Current and future flood risk	6
Future direction for flood risk management	10
Sub-areas	
1 Bournemouth and Christchurch sub-area	12
2 St Leonards, Verwood and West Moors sub-area	14
3 Wimborne Minster, Corfe Mullen and Sturminster Marshall sub-area	16
4 Middle Stour, Tarrant, Winterborne and Allen sub-area	18
5 Blandford Forum sub-area	20
6 Hambledon Hills sub-area	21
7 Upper Stour and Blackmore Vale sub-area	22
8 Gillingham sub-area	24
9 Stourhead sub-area	25
Map of CFMP policies	26



The purpose of a CFMP in managing flood risk

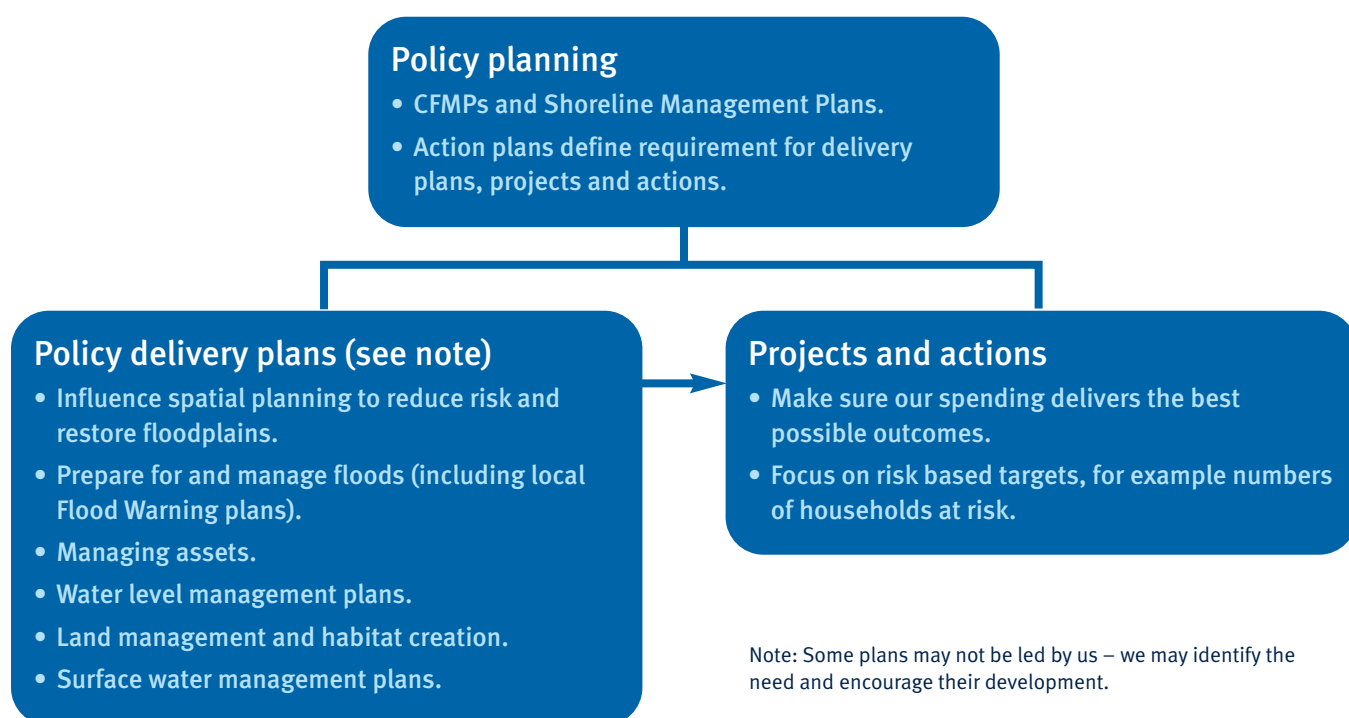
CFMPs help us to understand the scale and extent of flooding now and in the future, and set policies for managing flood risk within the catchment. CFMPs should be used to inform planning and decision making by key stakeholders such as:

- 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



Catchment overview

The Dorset Stour catchment is located in the south west of England. It extends from the headwaters of the River Stour at Stourhead flowing south east through Gillingham and Blandford Forum to Christchurch Harbour where it enters the English Channel.

Map 1 shows the location and extent of the Dorset Stour CFMP area. It includes the Rivers Stour and its tributaries including the rivers Crane, Allen, Tarrant, Winterbourne and Lodden. The downstream limits of the CFMP area meets with the upstream boundary of the Poole and Christchurch Bay Shoreline Management Plan (SMP) at Christchurch.

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 1,240 square kilometres, and has a population of around 400,000. Almost three quarters of these people live in the Bournemouth, Poole and Christchurch conglomeration in the south of the catchment. Away from this urban conglomeration the catchment is largely rural.

Towns within the catchment include Gillingham, Wincanton, Shaftesbury, Sturminster Newton, Blandford Forum, Verwood, Wimborne Minster and Corfe Mullen.

The landscape of the Dorset Stour catchment varies considerably with the varying geology along the Stour's course. This influences both the river's characteristics and the causes of flood risk across the catchment.

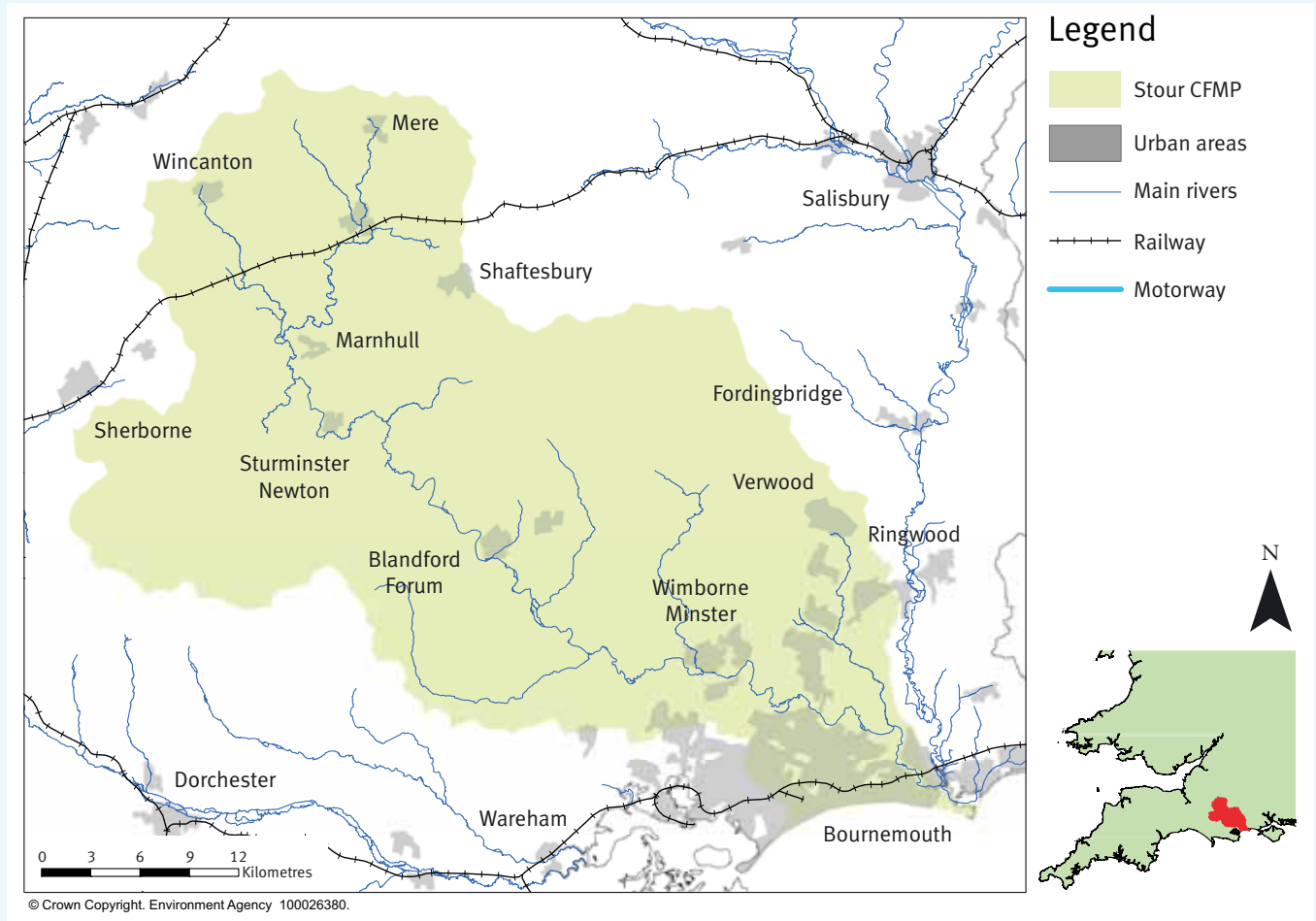
The upper catchment consists of impermeable clays of the Blackmore Vale resulting in shallow valleys with wide floodplains. The central band of permeable chalk on Cranborne Chase results in steeper valleys and narrow floodplains. The lower catchment has the semi-permeable sands, clays and gravels of the Dorset Heaths.

Run-off and changes in water levels are rapid in the many streams on the clays. Water levels rise more slowly in the rivers across the chalk, the rivers being fed by groundwater.

Within the River Stour catchment there are a number of sites designated for their environmental importance including Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar

sites. Important environmental sites in the catchment include Dorset Heaths (Ramsar, Site of Special Scientific Interest (SSSI), SPA, Environmentally Sensitive Area) and The Cranborne Chase and Wiltshire Downs Area of Outstanding Natural Beauty (AONB). Important environmental sites in the catchment include two AONB, three SAC, one Ramsar and SPA, 13 SSSI (including the River Frome SSSI), two National Nature Reserves and 1,800 Scheduled Monuments.

Map 1. Location and extent of the Dorset Stour CFMP area



← The Stour in flood at Wimborne Minster

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 Iford and Longham and other hamlets in November 2002 when 80 properties were affected by river flooding after a period of heavy rainfall on a saturated catchment.

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

- river flooding from the River Cale at Wincanton and River Stour in Sturminster Newton and Blandford Forum;
- tidal flooding up to Iford;
- surface water drainage flooding, which has occurred in Bournemouth. Rural areas have the potential to be at risk from surface water flooding.
- groundwater flooding which has occurred in Wimborne Minster and Sixpenny Handley and on other watercourses such as those draining Cranborne Chase and the Winterborne.

What is at risk?

At present there are around 1,500 people and 800 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, and in some, the ecosystem depends on flooding.

17 Scheduled Monuments are at risk of flooding, these being mostly bridges. Again, the actual risk of damage from flooding is limited.



↑ Park homes at Iford were flooded by the River Stour in November 2002

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

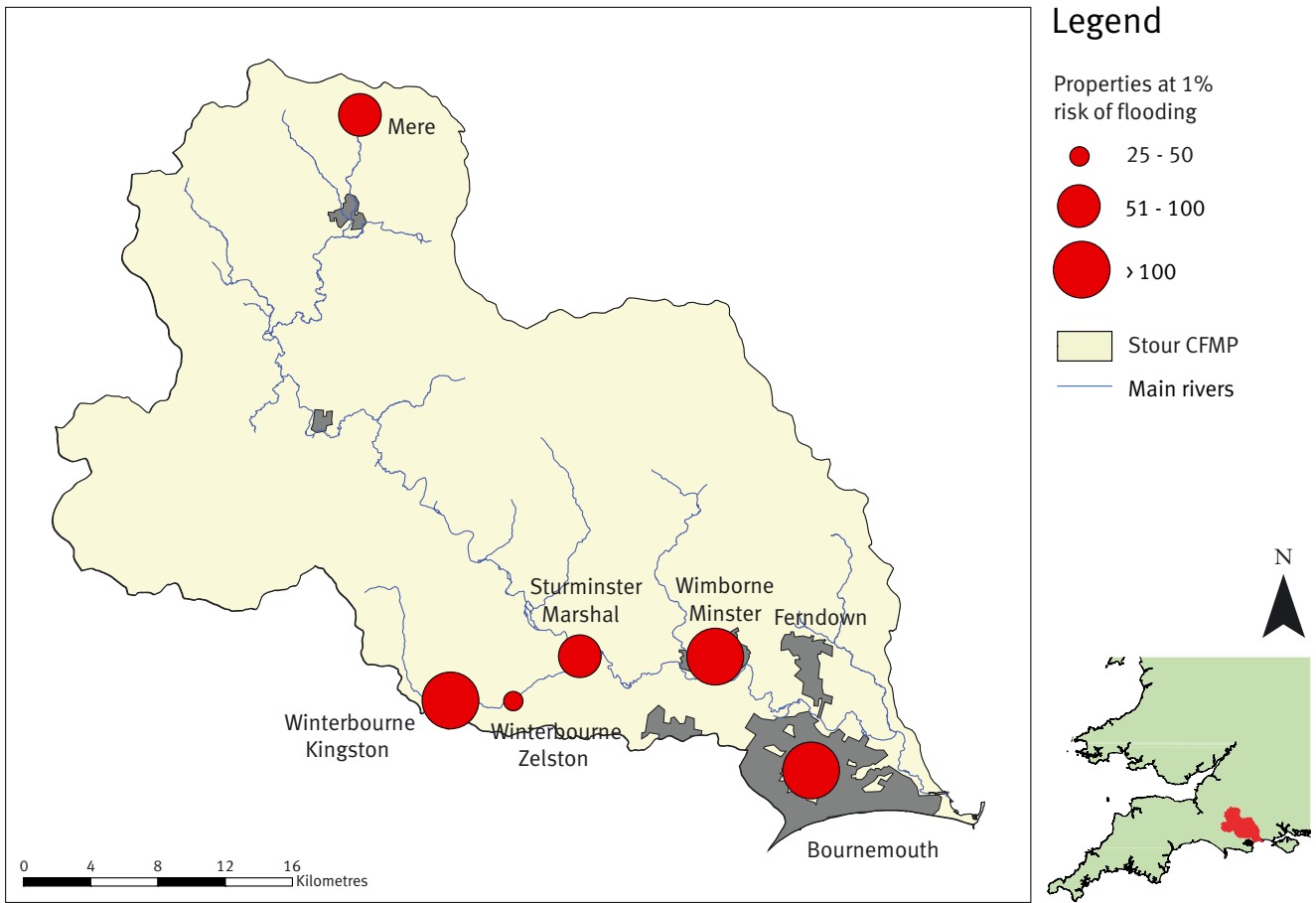


Table 1. Locations of towns and villages with properties at risk in a 1% annual probability river flood taking into account flood defence.

Number of properties at risk	Locations
> 100	Wimborne Minster, Bournemouth, Winterbourne Kingston
51 to 100	Sturminster Marshall, Mere
25 to 50	Winterbourne Zelston, Motcombe, Gillingham

Table 2. Critical infrastructure at risk:

1 electricity sub-station, 1 water treatment works, 1 km of main roads, and 0.8km of mainline railway

Where is the risk?

More than 40% of the people and properties that are at risk within the catchment from a 1% annual probability river flood are located in the Winterbornes. A further 2.5% are located in Bournemouth.

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 25 years, engineering schemes have been implemented to reduce flood risk in the catchment, including:

- building a flood relief channel in conjunction with flood banks on the River Lodden at Gillingham. This provides protection up to a 1% annual probability river flood;
- building flood banks and walls on the Shreen Water at Gillingham, on the Stour at Bournemouth and Christchurch, on the Stour at Sturminster Marshall, on the River Allen at Wimborne, and in conjunction with a pumping station on the Stour at Blandford Forum. These provide 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 pumping stations;
- 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 Dorset Stour 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 925 mm by the year 2100. This will increase the risk of flooding at, Bournemouth and Christchurch.

Using river models we estimate that by 2100, around 6,100 people and 2,900 properties across the catchment may be at risk from a 1%

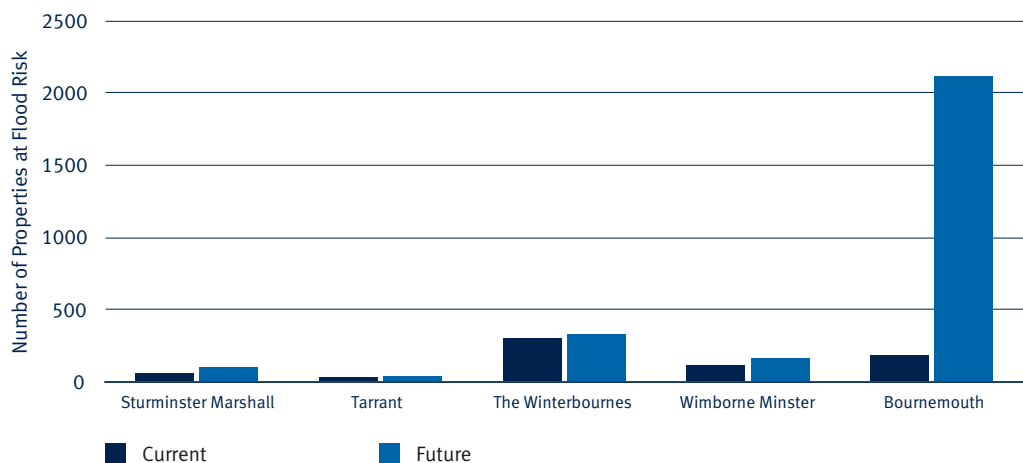
annual probability flood. Flood risk from rivers increases mainly in Bournemouth and Sturminster Marshall.

The sensitivity testing undertaken has shown that increased run-of rates and rising sea level as a result of climate change have a significant effect on flooding and flood damage across the catchment. Changes in land use management also have significant impact on flooding. In the lower catchment the high urban density and accumulation of increased run-off upstream results in the most notable increase in damages. Elsewhere in the catchment the impact of changes in land use management is significant for local communities.

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 Dorset Stour 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.



↑ Gillingham, Dorset. June 1917

Map 3. Dorset Stour sub-areas

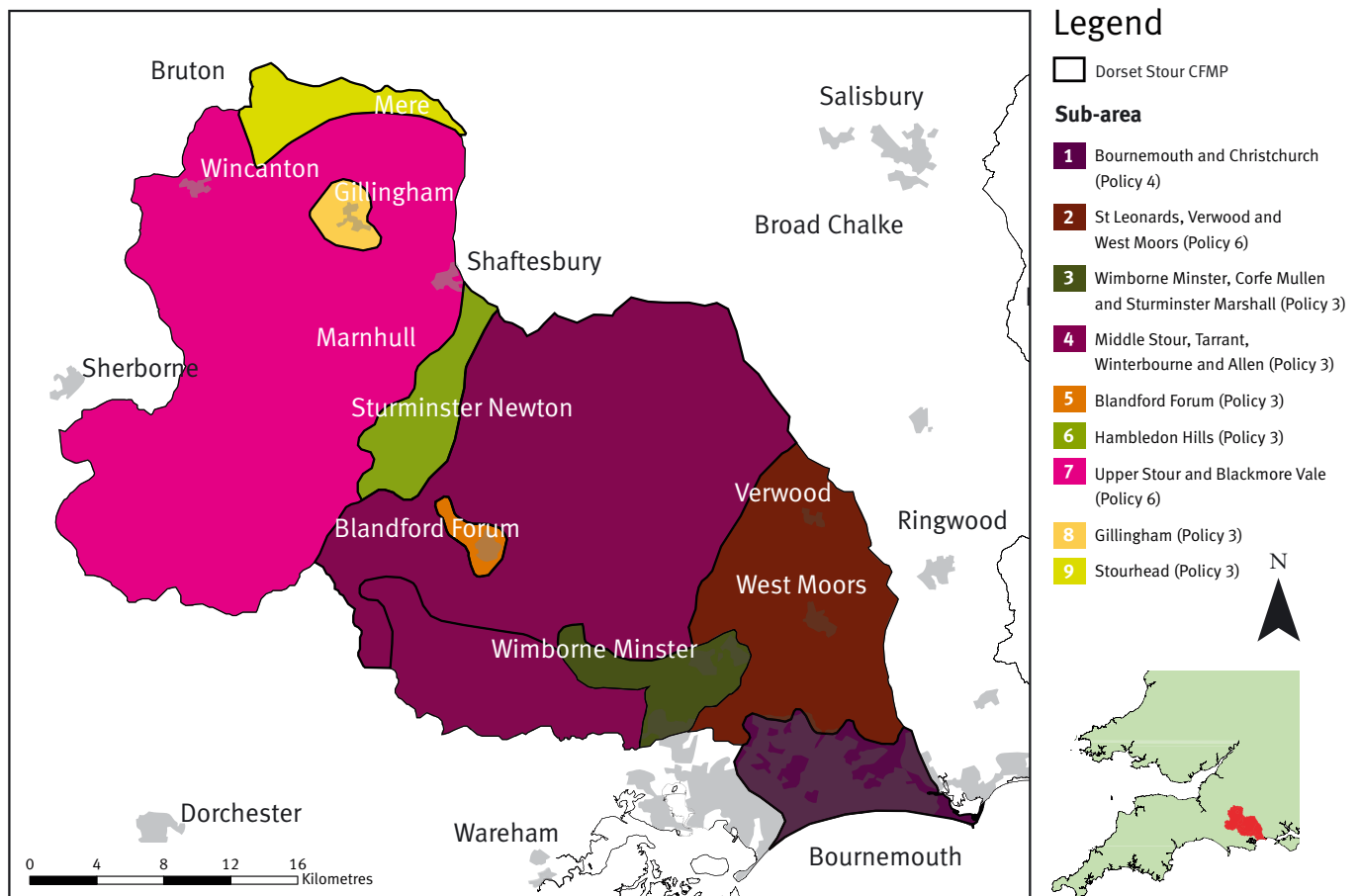


Table 3. Policy options

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.

Bournemouth and Christchurch

Our key partners are:

Bournemouth Unitary Council

Poole Unitary Council

Christchurch District Council

Highway Agency

Network Rail

Wessex Water

The issues in this sub-area

This sub-area covers the reach of the River Stour from downstream of the A338 road bridge to Christchurch Harbour. It includes the urban areas of Bournemouth and the western part of Christchurch.

This reach of the Stour is tidally influenced upstream to Iford Bridge on normal tides and up to Blackwater Bridge on Spring tides.

The natural floodplain is relatively wide and is important for providing flood storage. Where development has encroached onto and constrains the floodplain, flood protection

works have been undertaken to reduce flood risk to properties, businesses and infrastructure, notably on the left bank at Jumpers Common and Iford. There is a residual risk of flooding to property and considerable disruption to transport within the area. Surface water flooding is also of concern.

There is a history of flood incidents in the areas of Iford Bridge, Holdenhurst and Hurn Road. Major flood events were recorded in 1954 and 1979 impacting Holdenhurst, Iford Bridge, Red Hill and Riverway Recreation Park. 170 properties, primarily at Tucton, Iford and Wick, are likely to be affected in a 1% annual probability flood event. Of these 94% are residential properties (including a Home Park), the remainder of which includes shops, hotels and clubhouses. The future 1% annual probability flood event is expected to see the number of properties at risk increased to 2,100.

Increases in flood levels as a result of future change may cause overflowing or bypassing of existing defences.

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.

There are opportunities to reduce flooding in Bournemouth and Christchurch by increasing storage on the floodplain upstream. Bournemouth has a relatively high likelihood of surface water flooding, which would need to be investigated.

Proposed actions to implement the preferred policy

- Strengthen Development Control advice, including the use of SuDS, through Local Development Framework policies to ensure no increase in runoff from new developments and seek opportunities to reduce runoff, where possible.
- Develop Surface Water Management Plans for Bournemouth & Christchurch.
- Undertake a study of resilience of Iford, railway and Tuckton bridges under flood conditions and from extreme tides.
- Assess potential for improving current defences, to retain standard of protection in the future, as part of the System Asset Management Plan.
- Install monitoring equipment to quantify surface water flooding in urban areas.
- Increase coverage of Flood Warnings Direct service, in Bournemouth & Christchurch
- Improve and develop emergency response & Major Incident Plans.

St Leonards, Verwood, Moors and Dorset Heaths

Our key partners are:

East Dorset District Council

New Forest District Council

Christchurch District Council

Bournemouth Unitary Council

Poole Unitary Council

Natural England

Forestry Commission

Wessex Water

National Farmers Union

Dorset Wildlife Trust

There are no major flood defences, but an attenuation scheme in the Moors Valley Country Park provides some protection to areas downstream from minor flooding.

Floods have been previously recorded at Ferndown, West Moors, St Leonards, Verwood and Longham. Properties, transport and land were affected. There is evidence that flooding has restricted access to and within Bournemouth Airport. Around 50 properties may be at risk of flooding in a 1% annual probability flood event. This will increase to around 90 properties in the future.

The sub-area is, on the whole, relatively permeable and flooding is mainly caused by groundwater. Surface water flooding from agricultural run-off is of concern. The sub-area is mainly a source for flooding further downstream.

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.

This Policy is appropriate for this sub-area for the following reasons:

- The current risk of flooding is low despite the relatively high number of people living there;
- The risk to caravan parks is currently managed by owners' management plans.
- Factors influencing change, particularly urban development and land use management change will increase the level of risk only slightly;
- This is a large rural sub-area with opportunities to change how the land is used and possibly change flood storage to tackle rapid run-off due to soils, slope and the way the land is used;
- Factors influencing change in this sub-area are likely to affect isolated properties and villages, making large schemes unfeasible and

There are opportunities to reduce the contribution that flood flows from the sub-area make to flooding downstream by improving or creating wetland habitat.

The issues in this sub-area

This sub-area covers two tributaries of the Dorset Stour, the Moors and Crane Rivers. It includes the urban areas of Verwood, St Leonards, West Moor and Ferndown, along with many small villages and hamlets.

In the Moors River catchment there are mainly isolated properties and temporary or seasonal accommodation, such as caravan parks, that are at risk of flooding. Flooding results from the capacity of local channels being exceeded and constrictions caused by road crossings.

Proposed actions to implement the preferred policy

- Develop a Moors and Heaths Strategy to investigate locations for flood attenuation and wetland creation
- Set up working groups to explore and encourage Agri Environment and Woodland Scheme grants to help fund the change of land use and its management to increase water retention in the sub-catchment.
- Encourage and influence the uptake of Agri Environment Schemes to provide better land use practice with respect to rainfall run off.
- Strengthen Development Control advice, including the use of SuDS, through Local Development Framework policies to ensure no increase in runoff from new developments and seek opportunities to reduce runoff, where possible.
- Develop a Surface Water Management Plan for Verwood, Ferndown and St Leonards.
- Continue to provide Flood Warnings Direct service, including installation of a rainfall and river flow monitoring equipment.

Wimborne Minster, Corfe Mullen and Sturminster Marshall

Our key partners are:

East Dorset District Council

Poole Unitary Council

Wessex Water

The issues in this sub-area

This sub-area covers reaches of the River Stour from Shapwick to Wimborne Minster. It includes the urban areas of Wimborne Minster (located at the confluence of the River Stour and Allen) Sturminster Marshall (located at the confluence of the Rivers Winterborne and Stour) and Corfe Mullen.

The floodplain of the Stour is extensive. Periods of high groundwater levels maintain high base flows on the chalk fed tributaries, which, together with heavy rain, can lead to rapid and extreme responses from these watercourses. The coincidence of tributary flood flows with the Stour poses a risk of flooding at Sturminster Marshall and Wimborne Minster. There are some problems associated with local surface water and agricultural flooding in and around the urban fringes of Wimborne.

Flood alleviation schemes were built in the early 1990s at Shapwick, Sturminster Marshall and Wimborne Minster to protect 162 properties up to the 1% annual probability flood event. However, around 200 properties remain at risk in this event. The future 1% annual probability flood event is expected to see the number of properties at risk increase to 280.

The vision and preferred policy

Policy Option 3 - we are generally managing existing flood risk effectively.

This Policy is appropriate for this sub-area for the following reasons:

- The current level of flood risk is low and it is not expected to increase greatly in the future.
- The current flood risk management activities, carried out for the localised fluvial and surface water and urban drainage flooding problems, are considered appropriate for the level of risk.

Proposed actions to implement the preferred policy

- Continue to provide Development Control advice, including the use of SuDS, through Local Development Framework policies to ensure no increase in runoff from new developments and seek opportunities to reduce runoff, where possible.
- Develop Surface Water Management Plans for Wimborne Minster, Corfe Mullen and Sturminster Marshall.
- Assess potential for improving current defences, to retain standard of protection in the future, as part of the System Asset Management Plan.
- Continue to provide Flood Warnings Direct service.
- Continue practice and development of emergency response & Major Incident Plans.
- Continue with existing level of maintenance, looking for efficiencies and improvements.



↑ Wimborne, Dorset. August 1896

Middle Stour, Tarrant, Winterborne and Allen

Our key partners are:

North Dorset District Council

Purbeck District Council

East Dorset District Council

Natural England

Forestry Commission

National Farmers Union

The issues in this sub-area

This sub-area covers the reach of the River Stour from Shillingstone to Spetisbury, excluding the urban area of Blandford Forum. It includes the groundwater fed chalk streams the Tarrant and Winterborne as well as the River Allen catchment.

In this reach of the Stour flooding is generally confined to the floodplain, which, on the whole, is narrow and confined by topography. High base flows from chalk fed streams maintain a relatively constant flow in the Tarrant, which, together with heavy rain, can lead to flooding happening rapidly. Flooding has been recorded in the past along the floodplains of both the Stour and Tarrant, including the small villages of Tarrant Monkton, Tarrant Hinton and Tarrant Keyneston and Tarrant Gunville.

High base flows from the chalk maintain relatively constant flows in the Winterborne. Periods of high groundwater, together with heavy rain can lead to rapid and extreme responses from the Winterborne with the onset of flooding in steeper areas close to the source and overflowing of the channel elsewhere. Historic settlements, isolated properties and villages are entwined with the Winterborne and its tributaries. The villages of Winterborne Whitechurch, Winterborne Kingston, Winterborne Stickland and Winterborne Zelston have a well documented history of flooding from 1979 onwards, mainly caused by springs emerging, the Winterborne overflowing and groundwater.

Transport routes including the A31, A354, A350 and A357 roads have previously been affected by flooding, causing inconvenience and stress to the local communities which are otherwise isolated.

The fact that groundwater flooding lasts a long time makes many of the effects of flooding, such as flood recovery and stress, much worse. Several incidents of surface water flooding have been recorded in the sub-area.

We estimate that around 360 properties are at risk in a 1% annual probability flood. This number is expected to rise to around 370 in the future 1% annual probability flood event.

The sub-area is mainly a source for flood risk further downstream.

The vision and preferred policy

Policy Option 3 - we are generally managing existing flood risk effectively.

Policy 3 applies to this sub-area for the following reasons:

- This is a largely rural sub-area with a number of small villages and isolated properties currently at a limited risk of flooding;
- Flood risk in the future caused by climate change does not increase significantly and we can manage it satisfactorily by what we are currently doing;
- Changes in upstream sub-area Upper Stour and Blackmore Vale could reduce flood risk further in the future.

Proposed actions to implement the preferred policy

- Continue to provide Development Control advice, including the use of SuDS, through Local Development Framework policies to ensure no increase in runoff from new developments and seek opportunities to reduce runoff, where possible.
- Set up working groups to explore and encourage Agri-Environment and Woodland Scheme grants to help fund the change of land use and its management to increase water retention in the sub-catchment.
- Assess potential for improving current defences, to retain standard of protection in the future, as part of the System Asset Management Plan.
- Continue to provide Flood Warnings Direct service.
- Continue practice and development of emergency response plans.
- Continue with existing level of maintenance, looking for efficiencies and improvements.
- Install monitoring equipment to quantify rainfall and ground water flooding in sub-catchment.

Blandford Forum

Our key partners are:

North Dorset District Council

Emergency Services

The issues in this sub-area

This sub-area covers the urban area of Blandford Forum, including the villages of Stourpaine and Blandford St Mary.

In the middle catchment the Stour cuts through the central chalk band, which is intersected by intricate river valleys and winterbournes. Flooding is generally confined to the floodplain, which, on the whole, is narrow and confined by topography. The main urban area at risk from flooding is Blandford Forum and a series of embankments are maintained for flood defence to the south and west of the town. Flood risk from Pimperne Brook is managed by pumping station to the Stour.

Since defences were built in 1986 and 1992, flooding affecting transport routes, land and buildings has been recorded in 2000 and 2003 at Stourpaine and Durweston as a result of the Stour overflowing channel and banks. Flooding has historically been recorded around the Blandford Bridge.

We estimate that six properties are at flood risk. In the future the risk is expected to increase only slightly, but with the number of properties at risk remaining less than 10.

The vision and preferred option

Policy Option 3 - we are generally managing existing flood risk effectively.

This policy applies to Blandford Forum for the following reasons:

- There is very little current flood risk despite the relatively high number of people living here, due to the defences in Blandford Forum, and we cannot justify large-scale improvements;
- Flood risk in the future caused by climate change does not significantly increase and we can manage it satisfactorily by what we are currently doing;
- A more sustainable option to the pumping station at Pimperne Brook may be investigated through this policy;
- Changes in upstream sub-area Upper Stour and Blackmore Vale could reduce flood risk further in the future.

Proposed actions to implement the preferred policy

- Continue to provide Development Control advice, including the use of SuDS, through Local Development Framework policies to ensure no increase in runoff from new developments and seek opportunities to reduce runoff, where possible.
- Assess potential for improving current defences, to retain standard of protection in the future, as part of the System Asset Management Plan.
- Continue to provide Flood Warnings Direct service.
- Continue practice and development of emergency response & Major Incident Plans.
- Continue with existing level of maintenance, looking for efficiencies and improvements.

Hambledon Hills

Our key partners are:

North Dorset District Council

Wessex Water

Natural England

Forestry Commission

National Farmers Union

The issues in this sub-area

This sub-area covers an area of the CFMP with particularly high-grade agricultural land and includes the Stour from Child Okeford to Shillingstone. Other watercourses include Collyer's Brook and the River Iwerne.

Historical flood records show that flooding has occurred in the last 25 years at Bedchester, Compton Abbas and Fontmell Magna due to springs and the overflowing of Collyer's Brook. Flooding has also been recorded at Iwerne Minster and Shroton on the Iwerne River. On the smaller tributary of Cookwell Brook, flooding in the last 10 years has been caused by ditches and drains overflowing.

The A350 road in Iwerne Minster and the A357 road in Shillingstone have recently been closed because of flooding, restricting access from these villages to Blandford Forum.

It is likely that the risk of flooding from overflowing of watercourses

and drainage networks will increase in the future due to more frequent and heavy rain caused by climate change.

There is a low to medium chance of surface water flooding on the lower areas close to the Stour floodplain and a higher chance of flooding on the hills of Cranborne Chase. Several instances of surface water flooding from undersized drainage networks in the villages of Iwerne Minster and Fontmell Magna and field run-off in Compton Abbas have been recorded in the last 10 years. There is a medium chance of groundwater flooding, and there are records of flooding from springs at Compton Abbas and Fontmell Magna in 1979 and 1996.

We believe that no properties are at risk of flooding in the 1% annual probability flood event, and it is expected this will remain the case, in the future 1% event.

The vision and preferred option

Policy Option 3 - we are generally managing existing flood risk effectively.

This policy applies to the sub-area for the following reasons:

- Flood risk is currently low.
- We do not expect flood risk in the future caused by climate change to increase significantly and we can manage it satisfactorily using existing resources.

Proposed actions to implement the preferred policy

- Continue to provide Development Control advice, including the use of SuDS, through Local Development Framework policies to ensure no increase in runoff from new developments and seek opportunities to reduce runoff, where possible.
- Set up working groups to explore and encourage Agri-Environment and Woodland Scheme grants to help fund the change of land use and its management to increase water retention in the sub-catchment.
- Develop Surface Water Management Plans or seek property resilience grants for Shillingstone.
- Continue to provide Flood Warnings Direct service, including installation of a rainfall and river flow monitoring equipment.
- Continue practice and development of emergency response plans.
- Continue with existing level of maintenance, looking for efficiencies and improvements.

Upper Stour and Blackmore Vale

Our key partners are:

North Dorset District Council

South Somerset District Council

West Dorset District Council

Wessex Water

National Farmers Union

Natural England

Forestry Commission

The issues in this sub-area

This sub-area covers the rural areas of the upper Stour and Cale catchments and the Blackmore Vale. It includes the town of Shaftesbury and Wincanton, and the villages of Sturminster Newton and Stalbridge, along with many isolated villages and hamlets.

This sub-area is a seasonally waterlogged catchment, which responds rapidly to rainfall and, because of this, has a dense network of streams and tributaries. The topography of the Cale catchment determines the relatively narrow character of the river valley

and floodplain in contrast to the wider flood extent on the upper Stour. Flows tend to remain largely within channel, or tend to spill onto established and recognised areas of floodplain. At the confluence of the Stour and Manston Brook, Sturminster Newton suffers from flooding. Smaller communities along the Stour valley, downstream of the Stour-Cale confluence have been liable to flooding in the past. There is a well documented history of flooding throughout the sub-area most of it away from the two major rivers – the Stour and the Cale.

There is relatively limited chance of groundwater flooding in the majority of this sub-area. We need to understand more the occurrence of surface water flooding.

Water from this sub-area is a main source of flood risk for areas downstream.

Currently there are approximately 25 properties at risk of flooding in the 1% annual probability flood event. This is expected to increase to 35 properties for the future 1% annual probability flood event.

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 benefit.

This policy applies to this sub-area for the following reasons:

- This is a large rural sub-area with opportunities for changing how the land is used and possible flood attenuation through improving/maintaining connectivity between channel and floodplain in line with environmental objectives. This will help reduce peak flows and potentially benefit other sub-areas downstream; Tarrant, Winterbourne and Allen, Blandford Forum, Hambledon Hills and Gillingham;
- Factors influencing change in this sub-area are likely to affect isolated properties and villages, where large schemes are unfeasible.

Proposed actions to implement the preferred policy

- Develop a Blackmore Vale & Upper Stour Strategy to investigate locations for flood attenuation and wetland creation
- Set up working groups to explore and encourage Agri-Environment and Woodland Scheme grants to help fund the change of land use and its management to increase water retention in the sub-catchment.
- Encourage and influence the uptake of Agri-environment schemes to provide better land use practice with respect to rainfall run-off.
- Strengthen Development Control advice, including the use of SuDS, through Local Development Framework policies to ensure no increase in runoff from new developments and seek opportunities to reduce runoff, where possible.
- Develop a Surface Water Management Plan for Wincanton, and Sturminster Newton.
- Continue to provide Flood Warnings Direct service.

Gillingham

Our key partners are:

North Dorset District Council

Emergency Services

The issues in this sub-area

This sub-area covers the town of Gillingham, located at the confluence of the Stour, Lodden, and Shreen Water.

Gillingham is located on the confluence of three steep fast responding watercourses draining large agricultural catchments. Flooding has been experienced many times in the past. Incapacity of channels and road and rail crossings can lead to channels being exceeded, properties flooding and minor disruption to road transport. Soil erosion and build up of sediment is a major problem in the upper catchment. Farming and land use practices are thought to have a significant impact on rainfall run-off rates and soil erosion. Major flooding was recorded in 1979, 1982 and 2000 due to high levels in the Stour and Lodden. In 2000

several properties were affected in the centre of the town and the Bay Road bridge was closed. Flooding also occurs near the railway crossing.

Our broad scale modelling of the Stour and Shreen Water through Gillingham indicates approximately 15 properties may be at risk in a 1% annual probability flood event. We do not expect flood risk to increase substantially in the future. The future 1% annual probability flood event is expected to see the number of properties at risk increase to 17.

The vision and preferred policy

Policy Option 3 - we are generally managing existing flood risk effectively.

This policy applies to Gillingham as flood risk in the future caused by climate change does not increase significantly and we can manage it satisfactorily by what we are currently doing or through more sustainable measures.

Proposed actions to implement the preferred policy

- Continue to provide Development Control advice, including the use of SuDS, through Local Development Framework policies to ensure no increase in runoff from new developments and seek opportunities to reduce runoff, where possible.
- Assess potential for improving current defences, to retain standard of protection in the future, as part of the System Asset Management Plan.
- Continue to provide Flood Warnings Direct service.
- Continue practice and development of emergency response & Major Incident Plans.
- Continue with existing level of maintenance, looking for efficiencies and improvements.

Stourhead

Our key partners are:

Wiltshire Unitary Authority

South Somerset District Council

National Farmers Union

Natural England

Forestry Commission

National Trust

The issues in this sub-area

This sub-area covers the Cranborne Chase and West Wiltshire Downs Area of Outstanding Natural Beauty (AONB) and includes the villages of Stourton, Penselwood and part of Zeals.

Stourhead includes the portion of the North Dorset Limestone Ridge within the CFMP area, the source for both the River Stour and Shreen Water and a designated AONB. Rainfall, which soaks into the permeable chalk and greensands underlying the Limestone Ridge, appears as springs at Stourton and Great Bottom, collecting in a series of lakes at Stourhead, and at the base of a depression as Shreen Water. Less than five floods have been recorded in the area in the last 90 years. Most recorded incidents relate to the breaching of lakes following heavy rain at Stourton and Gasper, resulting in inundation of buildings, land and transport routes.

There is an estimated medium to high risk of surface and ground water flooding in the Stourhead sub-area. We estimate that there is less than 15 properties at risk from flooding in a 1% annual probability flood event. We expect there to be no increase in the number of properties at risk in the future 1% annual probability flood event. The risk of dam break occurring associated with the lakes will be minimal with the current level of maintenance being continued in the future.

The vision and preferred policy

Policy Option 3 - we are generally managing existing flood risk effectively.

This policy applies to the sub-unit for the following reasons:

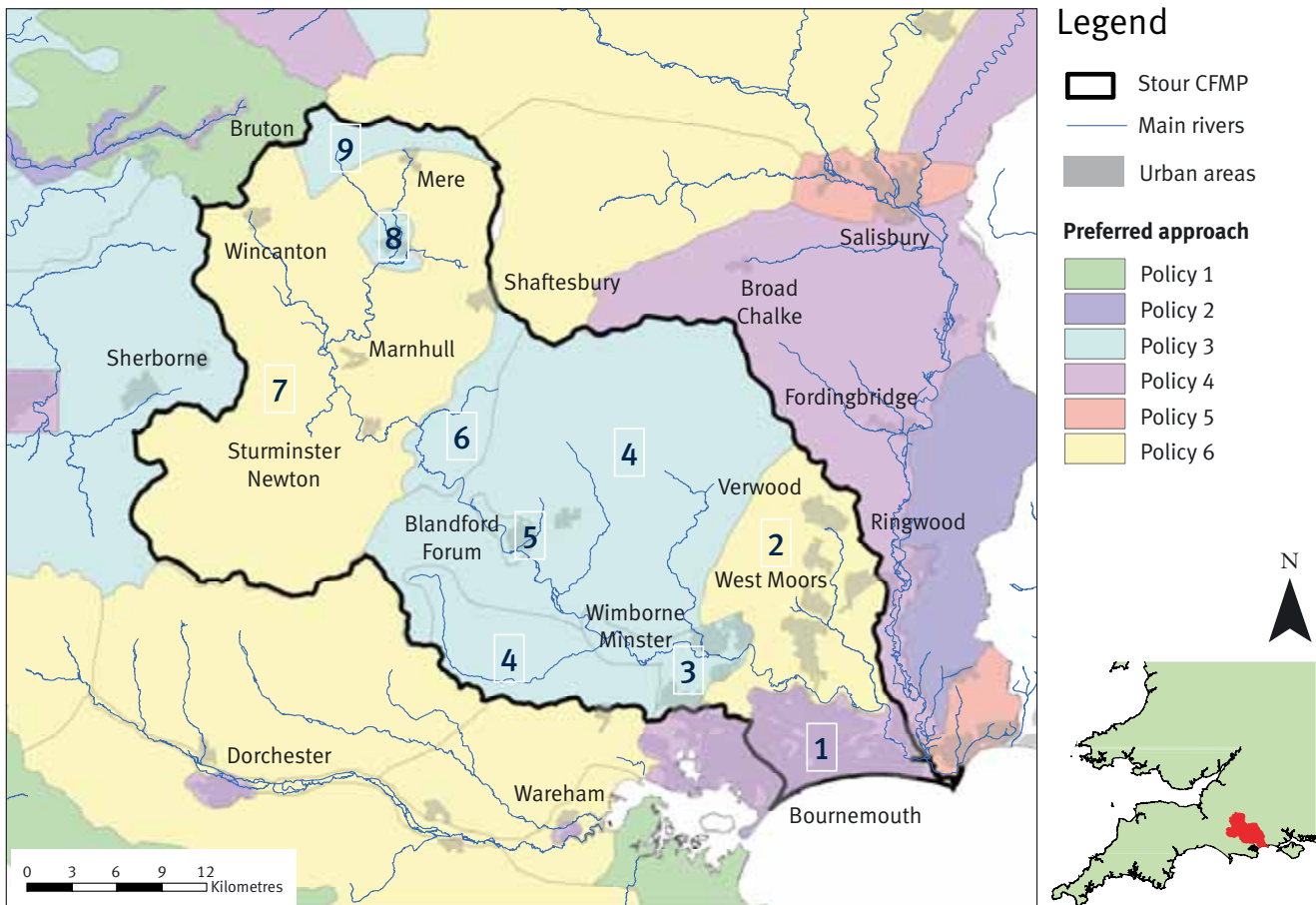
- Current flood risk is low;
- There is no evidence to support that the impact of climate change could increase the frequency of breaching of lakes associated with the source of the Stour;
- The sub-area has particularly significant heritage.

Proposed actions to implement the preferred policy

- Continue to provide Development Control advice, including the use of SuDS, through Local Development Framework policies to ensure no increase in runoff from new developments and seek opportunities to reduce runoff, where possible.
- Set up working groups to explore and encourage Agri-Environment and Woodland Scheme grants to help fund the change of land use and its management to increase water retention in the subcatchment.
- Continue practice and development of emergency response plans.
- Continue with existing level of maintenance, looking for efficiencies and improvements.
- Ensure undertaker is managing reservoir correctly.

Map of CFMP policies

Map of the policies in the Dorset Stour catchment



The sub-areas

- 1 Bournemouth and Christchurch
- 2 St Leonards, Verwood, Moors and Dorset Heaths
- 3 Wimborne Minster, Corfe Mullen and Sturminster Marshall
- 4 Middle Stour, Tarrant, Winterborne and Allen
- 5 Blandford Forum
- 6 Hambleton Hills
- 7 Upper Stour and Blackmore Vale
- 8 Gillingham
- 9 Stourhead

**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: This publication is printed on paper made from 100 per cent previously used waste. By-products from making the pulp and paper are used for composting and fertiliser, for making cement and for generating energy.