

Test and Itchen
Catchment Flood Management Plan
Summary Report December 2009



managing
flood risk

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Introduction



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

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

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

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

The main source of flood risk in the Test and Itchen CFMP is from river flooding and this is concentrated within the urban areas such as Romsey, Winchester, Southampton, Andover, Chandlers Ford, Eastleigh, Bishopstoke and Stockbridge. Surface water flooding is not thought to be a major problem at present, but future climate change may make this situation worse.

We cannot reduce flood risk on our own, we will therefore work closely with all our partners to improve the co-ordination of flood risk activities and agree the most effective way to management flood risk in the future. The key partners we have worked with are Defra, Natural England, Eastleigh Borough Council, Hampshire County Council, Southampton City Council, Winchester City Council, Test Valley Borough Council, National Trust, Test and Itchen Association, Southern Water.

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 black ink, appearing to read '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:

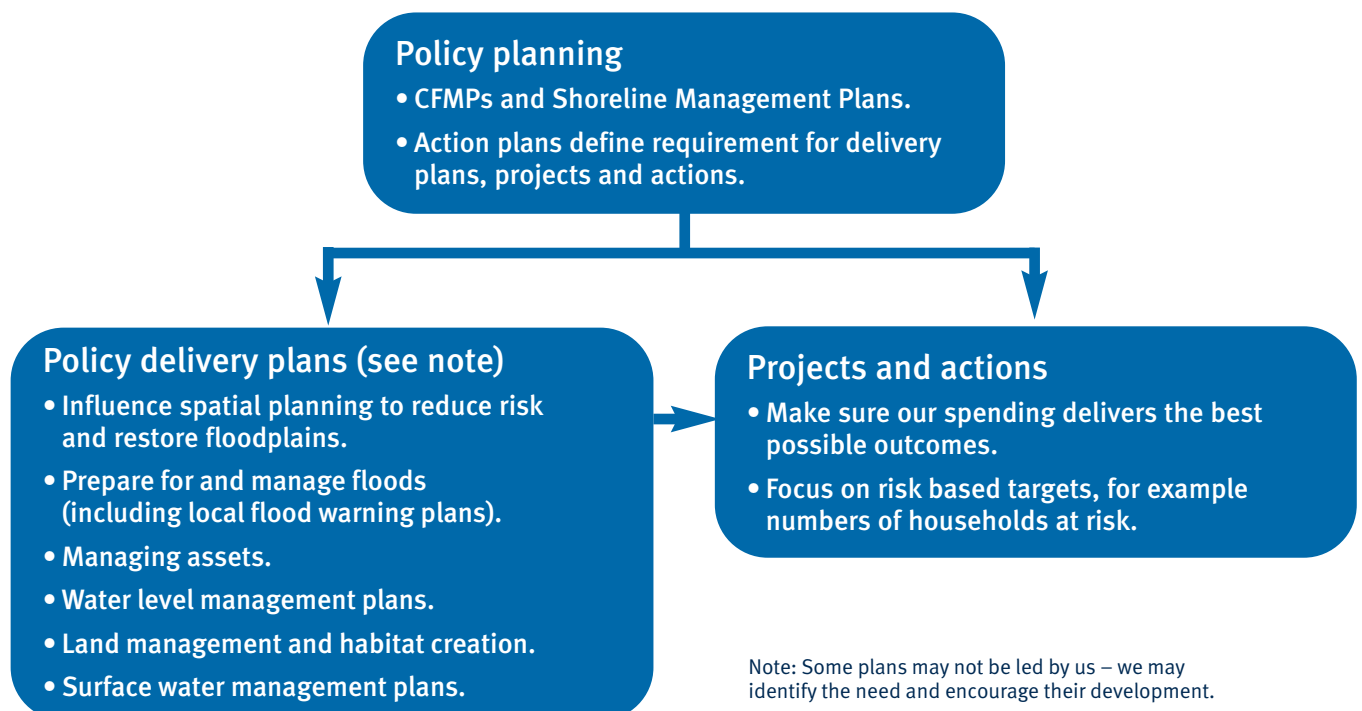
- The Environment Agency, who will use the plan to guide decisions on investment in further plans, projects or actions;
- Regional planning bodies and local authorities who can use the plan to inform spatial planning activities and emergency planning;

- 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 Test and Itchen CFMP incorporates the catchments of the River Test and River Itchen and their tributaries, an area of approximately 1,760 square kilometres. The downstream limit of the CFMP catchment is located where the Monk's Brook joins the Itchen Estuary and the Test joins Southampton Water which is the North Solent Shoreline Management Plan (SMP) boundary. The North Solent SMP deals with coastal flood risk management issues from the North Solent stretching from Selsey Bill to Hurst Spit. The rivers are regarded as two of the finest chalk streams in the world with their crystal clear waters supporting a rich diversity of

mammal, bird, fish, invertebrate and plant communities. Both main rivers are important sites of nature conservation and as such are designated as Sites of Special Scientific Interest (SSSI). The River Itchen is further designated as a Special Area of Conservation (SAC) under European legislation. They are both internationally famous for their trout and salmon fishing.

The geology of the catchment is dominated in the north by chalk. Groundwater in the chalk feeds both the River Test and River Itchen and provides the rivers with reliable flows of water. Here the response of river levels to rainfall is slow. The major urban locations in this area are Andover, Romsey and Winchester.

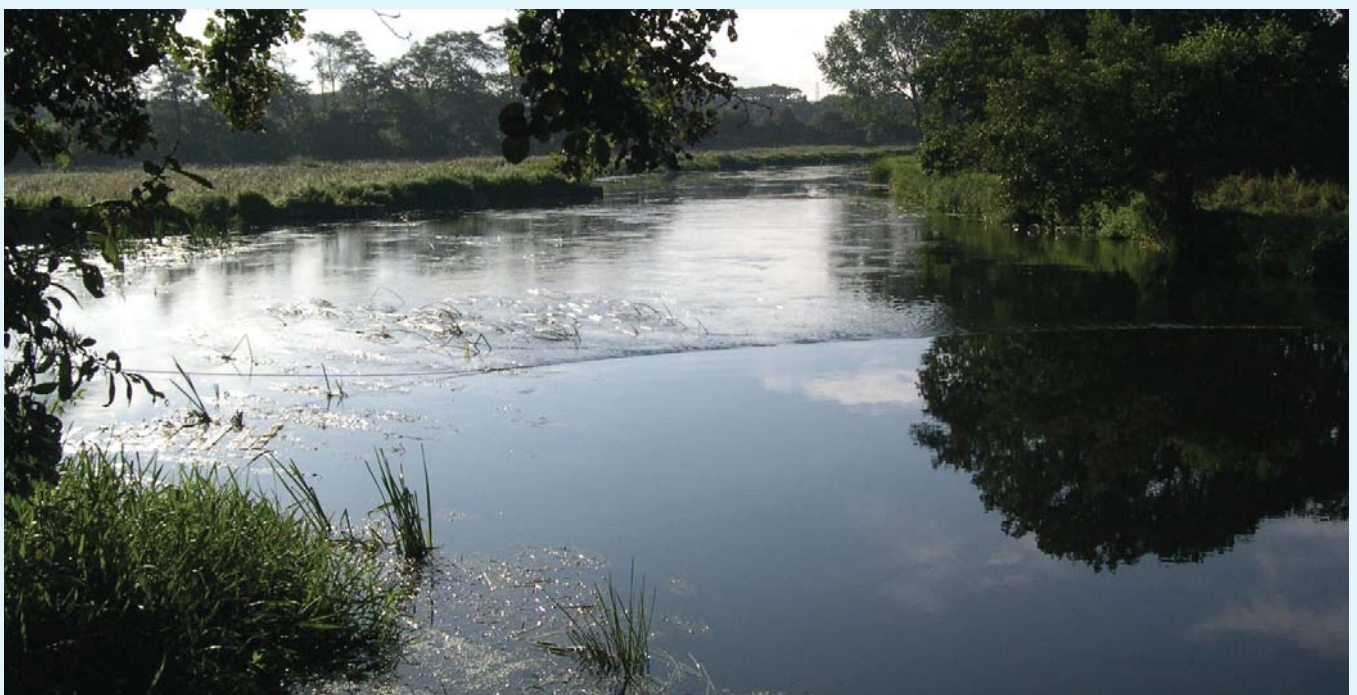
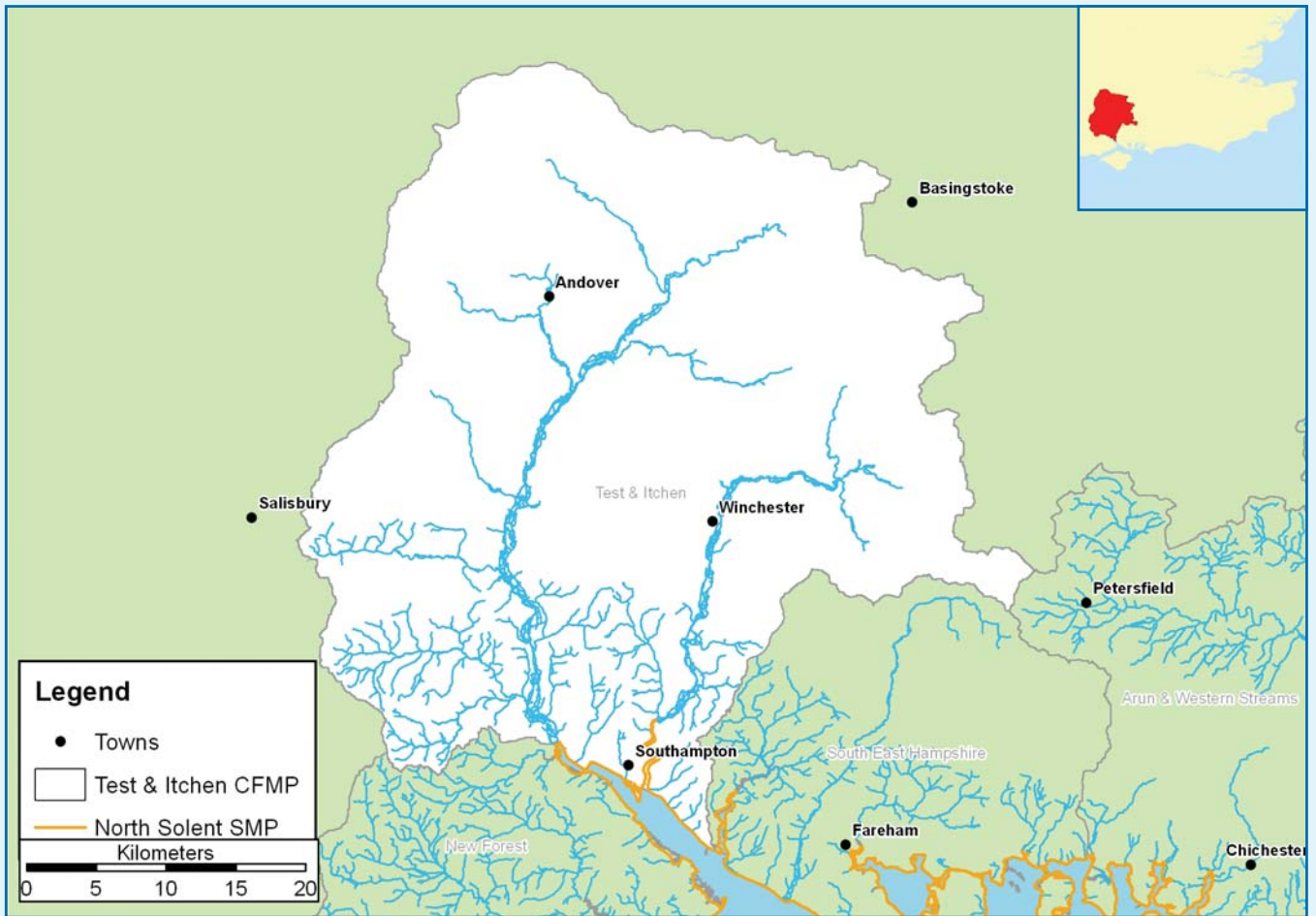
In contrast, the geology of the southern part of the catchment is dominated by clay. The river levels in these locations respond much quicker to rainfall. Major urban areas here are concentrated along the coast, such as Southampton, Totton and Eastleigh.

The Test and Itchen rivers are heavily modified, with many structures and multiple or braided channels along their lengths. This supports a number of commercial fisheries, benefiting from the high water quality. Mills, navigation and water meadows have also led to alterations in the flow of watercourses.



← River Itchen downstream of Winchester City Mill.

Map 1. Overview map of Test and Itchen catchment.



↑ Broadlands Lake, Calmore, near Southampton

Current and future flood risk

Overview of the current flood risk

Flood risk is the combination of the likelihood of a flood occurring and the consequences caused when it does. We have assessed flood risk across the CFMP area using broad-scale computer modelling, though making best use of existing knowledge and models where appropriate. Flood risk figures take into account current flood defences. In the Test and Itchen catchment the CFMP has considered flooding from rivers, surface water and sewage flooding from the drainage system, as well as groundwater flooding. There are over 3,500 properties in the catchment that have a 1% chance of flooding in any one year from rivers or groundwater.

There was extensive flooding in the winter of 2000/01 in the Test and Itchen catchment affecting up to 300 properties. Groundwater flooding of properties was experienced throughout the catchment during this time, while river flooding was located in places such as Winchester and Romsey.

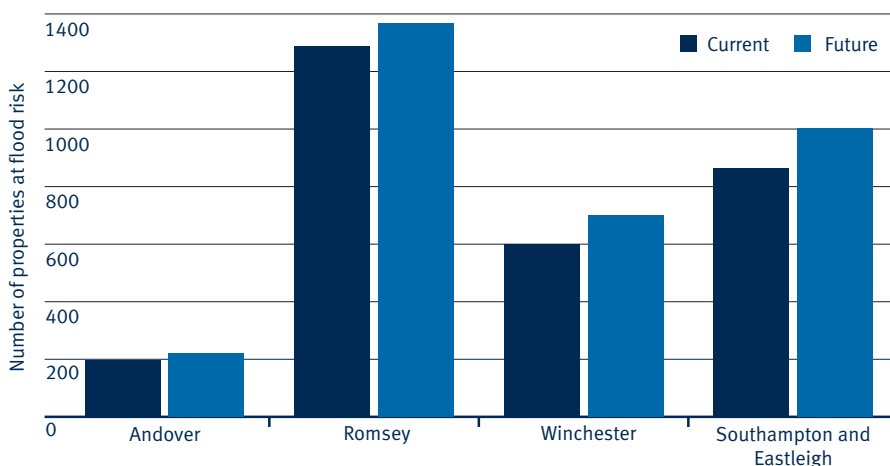
Where is the risk?

The distribution of flood risk from rivers and from groundwater is illustrated in the map on page 10.

The map on page 10 illustrates the consequences of a 1% annual

probability event (1 in 100 year) occurring within the CFMP area. The areas with the highest concentration of properties at risk from river flooding are tabulated opposite.

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



↑ Flood water in Water Lane, Winchester.

How we currently manage the risk

Historically flood risk management within the Test and Itchen CFMP area has been relatively limited, in large part to preserve the rich natural environment of the river corridors. Schemes completed have been largely related to the creation of culverted channels, and some limited raising of defences, that have often been closely integrated to on-going urban development. Therefore we are looking for opportunities to revert the catchment back to its natural state. Our activity is prioritised on a risk basis and our main activities include:

- **The maintenance of existing and the construction of new or replacement flood defences and structures.** There are flood defence works on the River Test at Romsey, Andover, Totton and Swaythling, with others on some reaches of the Monks Brook. Recently, we carried out maintenance works to improve channel capacity through Andover. On the Itchen sluice gates control flood flow distribution and levels, particularly at Winchester. An important structure is Old Alresford Pond Dam in the upper catchment, which needs operating and maintaining carefully, to minimise the risk of it failing.
- **Flood forecasting and warnings,** which are currently sent to approximately 840 properties and aim to give at least two

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	Romsey
500 to 1000	Winchester
100 to 500	Andover, Rural Chalk Catchment, Upper and Middle Test, Monks Brook, Lower Itchen and Coastal Urban
50 to 100	None
25 to 50	Clay Catchment, River Dun and Test to Romsey

Table 2. Critical infrastructure at risk:

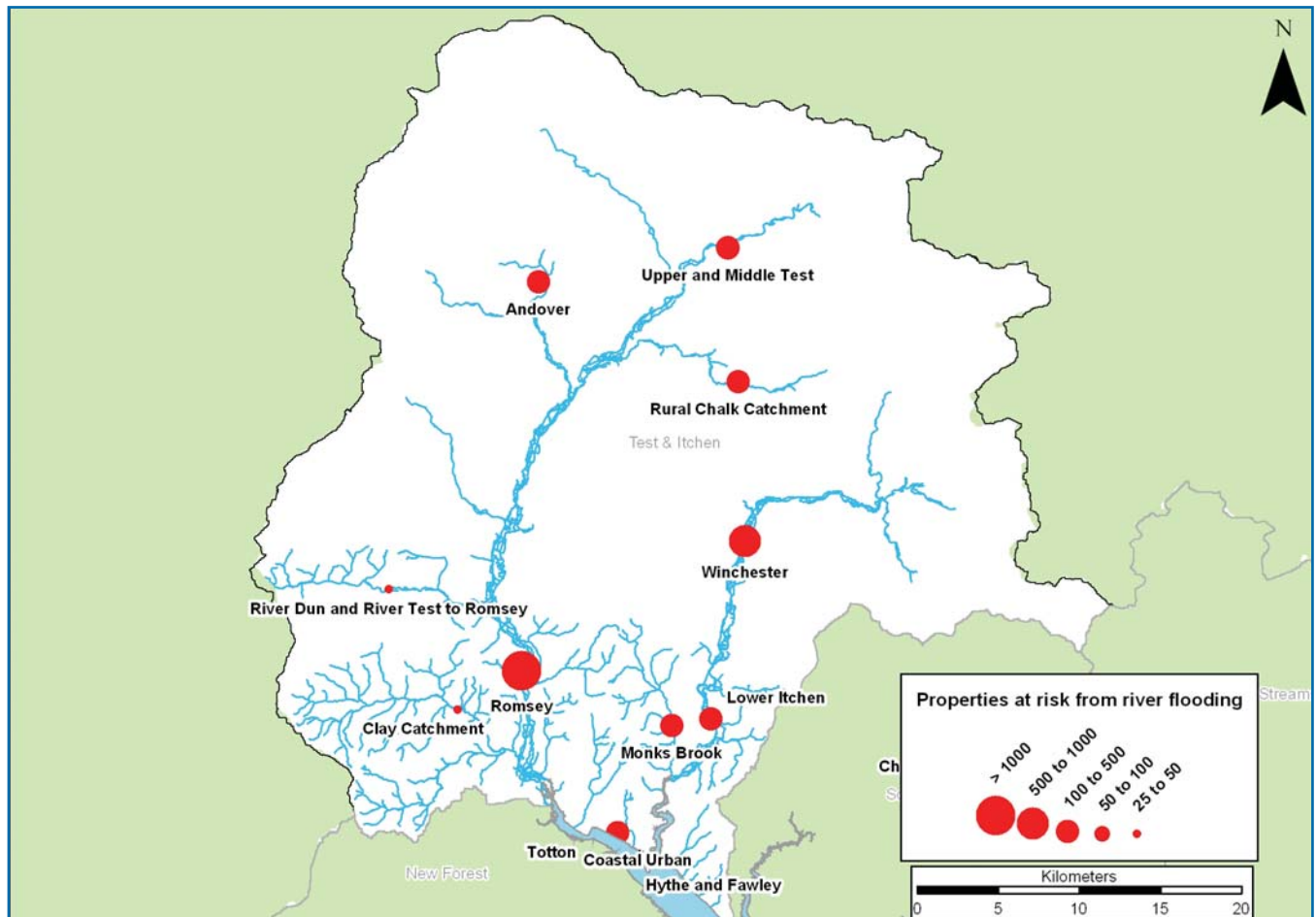
5 emergency services, 2 schools, 3 hospital/clinics, 9 electricity sub-stations, 5 sewage/water treatment works

Table 3. Designated sites at risk:

New Forest RAMSAR, SAC, SPA; Mottisfont Bats SAC; River Itchen SAC

- hours lead time ahead of river flooding.
- **Development control** to influence spatial planning so that new developments are sited away from flood risk areas, or take appropriate mitigation measures.
- **Flood risk mapping.** Flood mapping updated through Andover and part of the River Test (including Romsey) and the tidal Itchen. Further flood modelling and mapping has been focused on Winchester, Tanners Brook, Monks Brook (through Eastleigh) and Tadburn Lake Stream (to Romsey).
- **Strategic planning** to plan long term investment.
- **Environmental improvements.** River restoration implemented on the Monks Brook at the former Fleming Park Golf Course.

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. We have found that land use and land management change are likely to have extremely small effects on flood risk at a catchment scale, especially across the permeable chalk catchment, and that even in the faster responding tributaries lower down in the catchment urban development has limited effect. Urban development pressures will be centred on Portsmouth and Southampton and concentrated on existing urban areas. The land use and development drivers will all have potential effects

at a local scale, and need to be considered within the appraisal. However, climate change has a greater impact within the catchment area.

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. The scenario which has the greatest effect on future flood risk is climate change with 20% increase in peak flood flows. This scenario is used to assess likely impacts in the catchment. In the Test and Itchen catchment the future flood risk is likely to be from river

flooding and, to a lesser degree, surface water flooding. Our appraisal of the future risk in the catchment reveals the number of properties at risk to the 1% annual probability event will increase from 3521 to 3908 properties by the year 2100. The majority of these properties are located in Romsey, Winchester and on the Monks Brook near Eastleigh.

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 Test and Itchen 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 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.

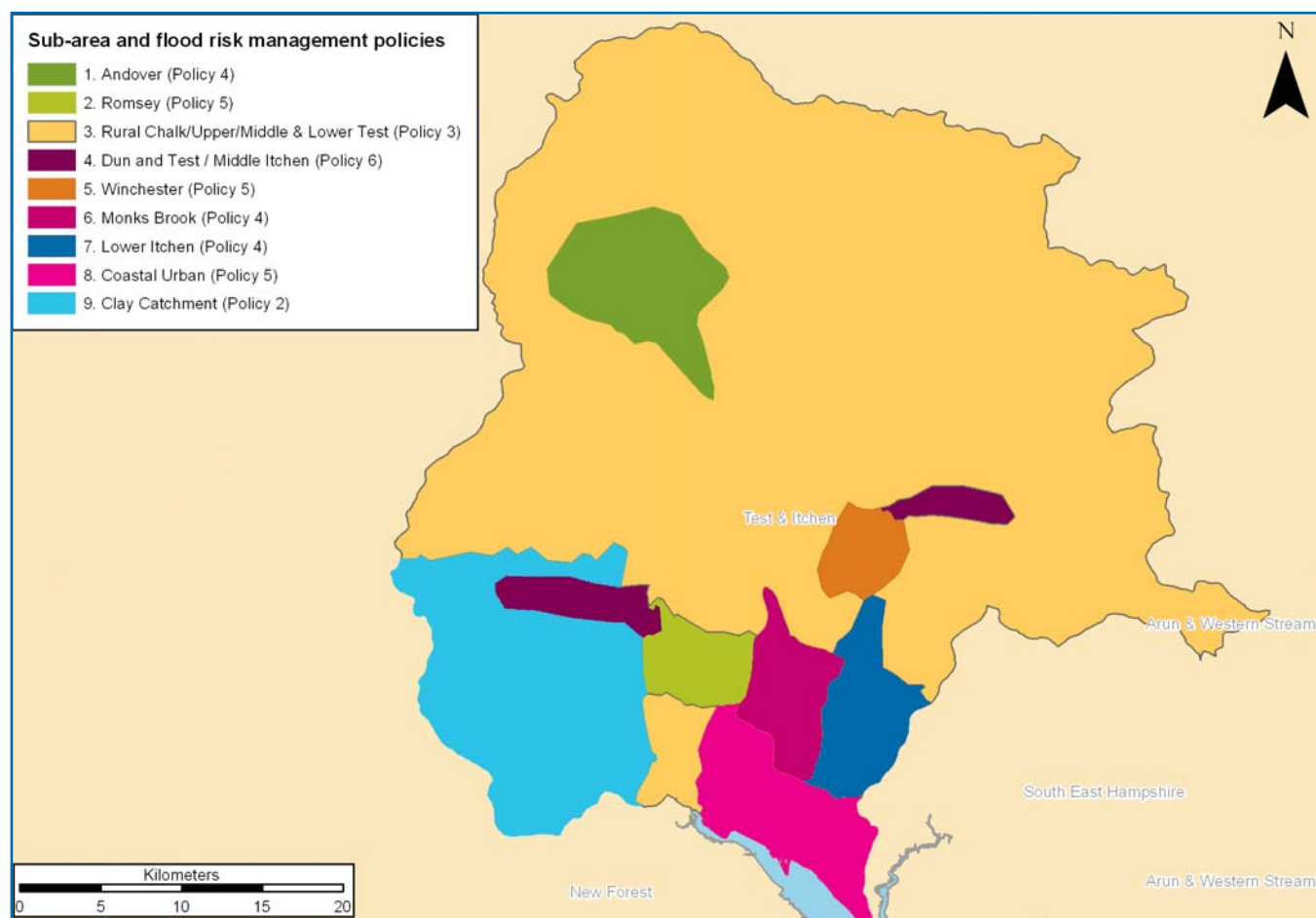


Table 4. Policy options.

→ 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.

Andover

Our key partners are:

Test Valley Borough Council

Southern Water

England CSF Delivery Initiative

National Farmers Union

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	198	220

The issues in this sub-area

The key flood risk in this sub-area is from river flooding in Andover, mainly from the River Anton and Charlton Stream, which can be made worse by high groundwater levels. Channels constrained by structures and the existing flood defences will be put under increased pressure from increased winter rainfall and more frequent and intense storms in the future.

The vision and preferred policy

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

The most sustainable approach to managing future flood risk in Andover will be to bring about long-term adaptation of the urban environment under the Policy 4 option.



↑ River Anton river restoration.



← Flooding in Andover in 1999.

The key messages

We need to improve channel capacity and conveyance through Andover by seeking to remove the constraints from urban development. This will reduce the probability of flooding through sustainable means. For example, re-creating river corridors would generate space for the river to flow and flood more naturally.

The risk of groundwater fed river flooding will mean that we will need to work with our partners to promote greater resilience to flooding through flood proofing and flood warning.

Proposed actions to implement the preferred approach:

- Encourage local planning authorities to apply PPS25, avoiding inappropriate development in the floodplain, and influence local development frameworks to effectively manage flood risk by encouraging conveyance through Andover and by maximising storage potential in the outlying villages. Planners should also ensure that there is no increase from run-off from new development by ensuring techniques such as Sustainable urban Drainage Schemes (SuDS) are adopted.
- Develop a collaborative Surface Water Management Plan (SWMP) to ensure that surface water flooding does not worsen with climate change.
- Seek out funding and partnership opportunities to open up river corridors in connection with new development and improvements in the short to medium-term (such as the River Anton strategy). Consider options for development of more open river corridors through Andover in the long-term.
- Undertake System Asset Management Plans (SAMPs) to review maintenance regimes, to assess future investment needs and to maintain the current level of risk.
- Influence land management within the unit, such as on the Pill Hill Brook, to reduce flood risk and instances of muddy flooding.

Romsey

Our key partners are:

Test Valley Borough Council

Emergency Services

Natural England

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	1287	1368

The issues in this sub-area

The flood risk in much of this urban area results largely from the Tadburn Lake Stream tributary of the River Test which, in contrast to the River Test, is relatively quick to respond to rainfall rates. The channels through Romsey can be constrained by structures and development.

The vision and preferred policy

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

To bring about a reduction in flood risk in Romsey it is necessary to take the approach under Policy 5.

The key messages

We need to improve channel capacity and conveyance through Romsey by seeking to remove the constraints from urban development. We need to investigate how to improve the standard of flood defences. We will need to work with our partners to promote greater resilience to flooding through flood proofing, emergency planning and flood warning.

Proposed actions to implement the preferred approach:

- Develop a flood risk management strategy for Romsey, focusing on improving the standard of defences and Tadburn Lake Stream storage or conveyance.

- Encourage local planning authorities to apply PPS25, avoiding inappropriate development in the floodplain and influence local development frameworks to effectively manage flood risk by encouraging conveyance through Romsey. Planners should also ensure that there is no increase from run-off from new development.
- Implement the River Test Water Level Management Plan to identify and agree water level management that meets the need of flood risk management and the enhancement of wetland
- Undertake System Asset Management Plans (SAMPs) to review maintenance regimes, to assess future investment needs and to reduce the current level of risk.
- Develop an emergency response plan to mitigate flood risk in Romsey.



← Fishlake Meadows near Romsey.

Rural Chalk/Upper Middle and Lower Test

Our key partners are:

Test Valley Borough Council

Winchester City Council

Basingstoke and Deane Borough Council

Salisbury District Council

Kennet District Council

Natural England

National Farmers Union

England CSF Delivery Initiative

Local Flood Wardens

Various Parish councils

The issues in this sub-area

This sub-area is largely rural in nature but flood risk is concentrated in Stockbridge and other small towns which straddle the River Test. Groundwater flooding can be widespread following prolonged rainfall leading to flooding of fields, overland flow and flooding of cellars.

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	511	553

The vision and preferred policy

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

While the possible flood damages are high in this sub-area, there is some uncertainty with the modelling outputs. We will retain our current levels of investment in this location while we investigate further. This is best achieved under Policy 3.

The key messages

We need to better understand the flood risk in this sub-area through further investigations. We will continue to provide the same levels of service while we find better ways to manage the flood risk.

There is little opportunity to reduce flood risk from rivers on the Lower Test. We will continue to manage our sea defence assets in line with the policies in the Shoreline Management Plan. Any works will have to ensure that there is no damage to the Solent Maritime Special Area of Conservation or the Solent and Southampton Water Special Protection Area and Ramsar site.

Reducing the frequency of groundwater flooding is not always feasible so alternative actions need to be taken to reduce flood risk, such as improving maintenance of the drainage pathway. Flood resilience measures will be required to reduce the consequences of flooding.

Proposed actions to implement the preferred approach:

- Undertake System Asset Management Plans (SAMPs) to review maintenance regimes and to maintain current level of investment.
- Implement the River Test Water Level Management Plan to identify and agree water level management that meets the need of flood risk management, and the enhancement of wetland habitat.
- Raise awareness of groundwater flooding and promote flood-proofing schemes where appropriate. This will include advice concerning development control.
- Develop a groundwater flood warning plan to improve the levels of service across the rural chalk sub-area by expanding coverage, reducing lead-in times and enhancing the existing network of observation boreholes from which ‘trigger’ levels can be monitored. As part of the Flood Warning Plan consider how present and future liaison with local authorities/parish councils will operate, this will ensure the continued use of flood wardens and village action plans, plus possible additional methods of disseminating flood warnings in the future.
- Develop a Land Management Plan to explore the potential for changes in land use and land management practices within sub catchments, such as the Bourne Rivulet, River Dever, Wallop Brook, Cheriton Stream and River Alre.
- Develop the River Itchen Water Level Management Plan to identify and agree water level management that reduces flood risk and enhances wetland habitat.
- Seek out funding and partnership opportunities in connection with highway and culvert maintenance/ enhancements in the short to medium term, to ensure correct use of roadside drainage ditches and the removal of obstructions to the passage of floodwater.



← Groundwater flooding in Brown Candover.

River Dun and River Test to Romsey/Middle Itchen

Our key partners are:

- Test Valley Borough Council

- Natural England

- National Farmers Union

- England CSF Delivery Initiative

- Winchester City Council

- Natural England

The issues in this sub-area

Flow on the upper and middle sections of the River Itchen are dominated by a significant groundwater component. The River Dun catchment flows across both permeable chalk and more impermeable clay. As a result the catchment responds to rainfall in a mixed way, and in some cases can have a fast response. There are few residential properties at risk of flooding but channels and structures can be affected by the build up of silt in the river which restricts the flow of water. This can lead to flooding of roads and other infrastructure.

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	32	33

The vision and preferred policy

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

We need to work sustainably with natural process to make space for water to reduce flood risk. This is best achieved through Policy 6.

The key messages

The flood risk in this sub-area is relatively small in comparison with other areas but as the River Dun is a tributary of the River Test we need to investigate whether storage is effective in reducing flood risk in Romsey.

Although flood risk is low in the Middle Itchen, there are potential downstream benefits to be gained from storing floodwater in this area. Any works will need to ensure that there is no damage to the River Itchen Special Area of Conservation.

We need to influence land management to adopt best practice to reduce flood risk.



← River Dun.

Proposed actions to implement the preferred approach:

- A study should be carried out to investigate flood storage potential and the possibility of decreasing flooding downstream.
- Develop a Land Management Plan in partnership with the agricultural industry, to explore the potential for changes in land use and land management practices. We need to reduce direct run-off into watercourses, which can introduce significant sediment and diffuse pollutants into the drainage network.
- Implement the River Test and River Itchen Water Level Management Plans to identify and agree water level management that meets the need of flood risk management and the enhancement of wetland habitat.
- Undertake System Asset Management Plans (SAMPs) to review maintenance regimes and to assess future investment needs. We need to maximise flood storage on the River Dun, improve the efficiency of floodplain connectivity and restore sustainable, natural river functions.
- A pre-feasibility study should be carried out to investigate storing floodwater on the upstream floodplain to benefit Winchester. The study should also investigate potential creation of new habitats.



↑ River Dun at Dunbridge.

Winchester

Our key partners are:

Winchester City Council

Emergency Services

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	599	701

The issues in this sub-area

With a significant proportion of Winchester in Flood Zones 2 and 3, there is a large number of residential properties at risk of flooding from the River Test and some key infrastructure. Many of the various channels throughout the Winchester are constrained by sluices, weirs and historical development, such as mills.

The vision and preferred policy

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

The key messages

We need to improve channel conveyance and the operation of channel structures through Winchester. Any works will need to ensure that there is no damage to the River Itchen Special Area of Conservation. Opportunities to reduce the frequency of flooding are limited, so the focus will be upon promoting greater resilience through flood proofing, emergency planning and flood warning.

Proposed actions to implement the preferred approach:

- Develop a flood risk management strategy for Winchester. The strategy should focus on channel conveyance improvements together with local defences.
- Undertake System Asset Management Plans (SAMPs) to review maintenance regimes, to assess future investment needs and to reduce the current level of risk.
- Develop an emergency response plan to mitigate flood risk in Winchester.
- Put in place policies within the local development frameworks that work towards long-term protection and re-creation of river corridors through sustainable land use management.
- Seek out funding and partnership opportunities in connection with new development in the short to medium-term and consider options for redevelopment of more open river corridors through Winchester in the long-term.



← Flood flows through Winchester.

Monks Brook

Our key partners are:

Eastleigh Borough Council

Test Valley Borough Council

Southampton City Council

Southern Water

The issues in this sub-area

Monks Brook is a heavily urbanised catchment in which the channel passes through developed areas for almost its entire length, from source to the confluence with the River Itchen. The river is situated on less permeable geology and, when combined with the urban nature of the catchment, means that flows are dominated by fast surface run-off from heavy rainfall. Flood risk will increase in the future due to more frequent intense storms.



← Typical concrete trapezoidal channel in the Monks Brook.

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	320	407

The vision and preferred policy

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

The key messages

We need to improve conveyance along the Monks Brook by seeking to remove the constraints from urban development. This will reduce the probability of flooding through sustainable means. We will need to work with our partners to promote greater resilience to flooding through flood proofing and flood warning.

Proposed actions to implement the preferred approach:

- Develop a flood risk management strategy.
- Undertake System Asset Management Plans (SAMPs) to review maintenance regimes, to assess future investment needs and to maintain current level of risk.
- Improve flood warning by expanding the service, reduce lead-in times and develop better predictive tools.
- Develop a collaborative Surface Water Management Plan (SWMP).
- Put in place policies within the local development frameworks that work towards long-term protection and re-creation of river corridors through sustainable land use management.
- Seek partnership opportunities in new development for open river corridors incorporating Sustainable urban Drainage Schemes (SuDS).

Lower Itchen

Our key partners are:

Winchester City Council

Eastleigh Borough Council

Southampton City Council

Southern Water

Natural England

National Farmers Union

England CSF Delivery Initiative

The issues in this sub-area

Flood flows on the lower sections of the River Itchen are largely dominated by a significant groundwater component. There is little in the historic record that refers to this sub-area but our modelling suggests that there is significant flood risk to Bishopstoke and Eastleigh. Proposed development in Eastleigh, rising sea levels and more intense storms in the future all have the potential to increase flood risk.

The vision and preferred policy

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

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	281	304

The key messages

We need to better understand the flood risk in this sub-area through further investigations and put in place measures to mitigate for the increased risk from climate change. We need to work with local planning authorities to ensure that urban development does not increase flood risk. Any works will need to ensure that there is no damage to the River Itchen Special Area of Conservation.

Proposed actions to implement the preferred approach:

- Undertake a pre-feasibility study to investigate opportunities to protect or improve the condition of the River Itchen SSSI/SAC.
- Undertake System Asset Management Plans (SAMPs) to review maintenance regimes, to assess future investment needs and to maintain current level of risk.

- Develop a land management plan to explore the potential for changes in land management.
- Develop a collaborative Surface Water Management Plan (SWMP).
- Put in place policies within the local development frameworks that work towards long-term protection and re-creation of river corridors through sustainable land use management.
- Implement the River Itchen Water Level Management Plan to identify and agree water level management that meets the need of flood risk management and the enhancement of wetland habitat.
- Seek partnership opportunities in connection with new development in the short to medium-term and consider options for redevelopment of more open river corridors such as the Lower Itchen restoration study.



Lower River Itchen. →

Coastal urban

Our key partners are:

Southampton City Council

New Forest District Council

Test Valley District Council

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	264	291

The issues in this sub-area

The main flood risk in Southampton and Totton is from the sea which is considered by the North Solent Shoreline Management Plan. Tanners Brook and Holly Brook tributary present the most significant risk of river flooding within the Coastal Urban sub-area, although the tidal stretch of the River Itchen also passes through it. Flooding on Tanners Brook is characterised by fairly rapid run-off from heavy rainfall. The channel is heavily urbanised and subject to modification.

Surface water flooding has been experienced in Southampton and Totton which poses significant risk in the future as it will increase due to more frequent and intense storms, overwhelming urban drainage systems.

The vision and preferred policy

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

To bring about a reduction in flood risk in Southampton and Totton it is necessary to take the approach under Policy 5.

The key messages

We need to improve channel capacity and conveyance along Tanners Brook and Holly Brook by seeking to remove the constraints from urban development. This will reduce the probability of flooding through sustainable means, such as recreating river corridors so that there is space for the river to flow and flood more naturally.

Improved surface water management will be required to reduce the risk both now and in the future. We need to work with local planning authorities to ensure that urban development does not increase flood risk.

Any works will have to ensure that there is no damage to the Solent Maritime Special Area of Conservation or the Solent and Southampton Water Special Protection Area and Ramsar site.

Proposed actions to implement the preferred approach:

- Undertake a study to reduce flood risk along Tanners Brook. We need to consider options for channel conveyance improvements that will work together with the river restoration project. Data improvements to the Tanners Brook flood modelling will also be required.
- Undertake System Asset Management Plans (SAMPs) to review maintenance regimes, to assess future investment needs and to reduce the current level of risk.
- Put in place policies within the local development frameworks that work towards long-term reduction of flood risk and the re-creation of river corridors through sustainable land use management.
- Seek out funding and partnership opportunities in connection with new development in the short to medium-term and consider options for redevelopment of more open river corridors through the coastal urban sub-area.

Clay catchment

Our key partners are:

New Forest District Council

Test Valley Borough Council

Impact of a 1% annual probability flood event

	Today	Future (2100)
Number of properties at risk	30	32

The issues in this sub-area

The Clay catchment comprises of the area to the west of the Lower Test and south of the River Dun. The sub-area contains a number of watercourses, including the Rivers Blackwater and Cadnam, draining to the Test.

The watercourses in this sub-area are very responsive and peak flows are dominated by fast run-off from the impermeable clay. However, the mainly rural nature of the clay sub-area results in relatively few properties and people being at risk of flooding.

The key messages

Where feasible we need to continue to protect the locations currently at risk within the sub-area, but need to look at altering maintenance regimes to re-allocate resources to areas with greater risk.

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.

Flood risk is low in this sub-area so we need to find ways to re-prioritise investment to other areas within the CFMP. The way we can achieve this is under Policy 2.

Proposed actions to implement the preferred approach:

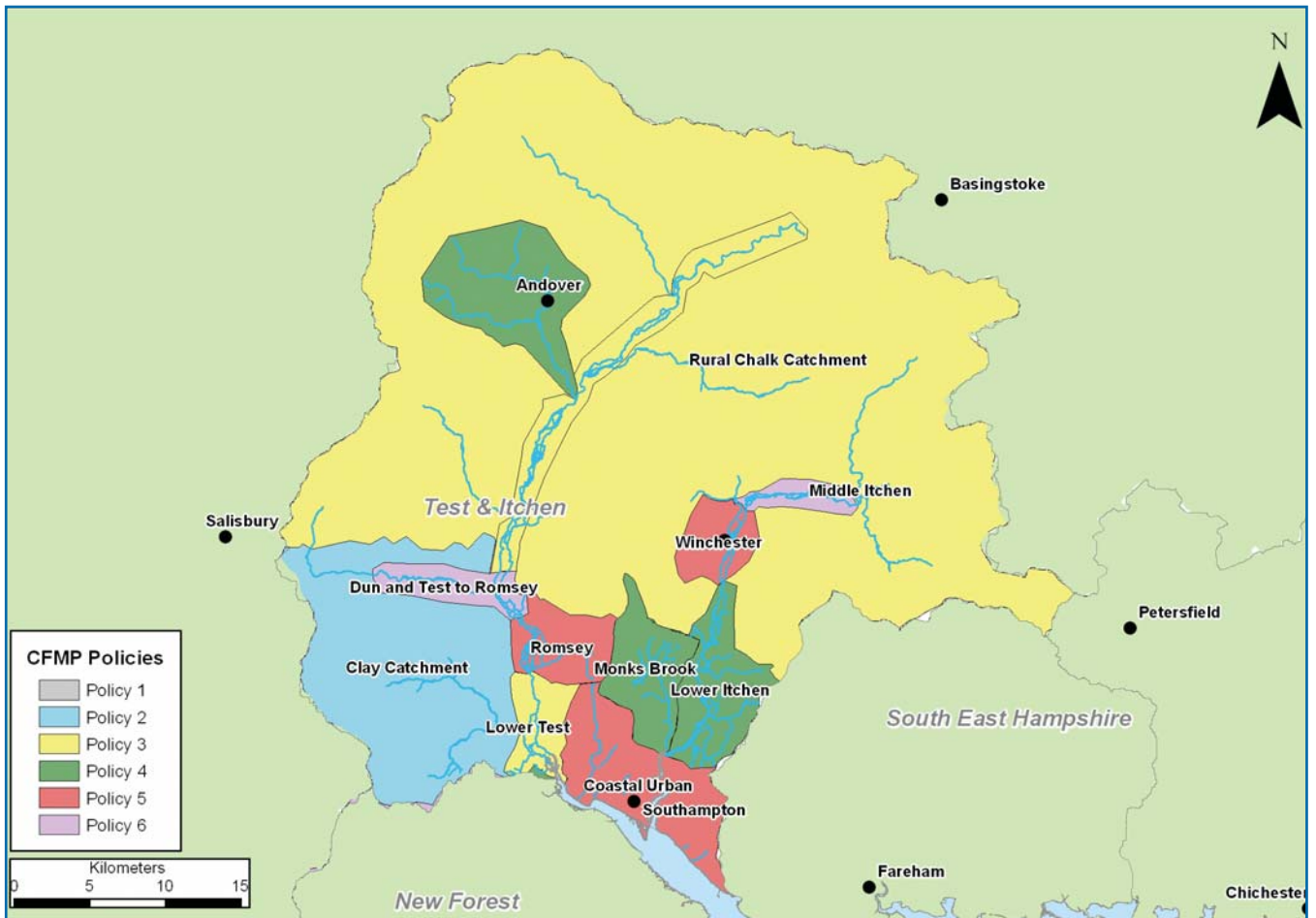
- Undertake System Asset Management Plans (SAMPs) to review maintenance regimes, to assess future investment needs and to reduce both maintenance and the number of assets within the system.
- Implement the River Test Water Level Management Plan to identify and agree water level management that reduces flood risk and enhances wetland habitat.



↑ Cadnam River.

Map of CFMP policies

Map of the policies in the Test and Itchen catchment.



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