managing
flood risk
We are Environment Agency Wales. 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.

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

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

The Eastern Valleys 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.

This area of south east Wales has experienced severe flooding in the past caused largely by heavy rainfall on saturated catchments. Flood risk management has, historically, focussed on flood defence schemes to reduce the likelihood of flooding to the urban areas that have developed within the floodplain, for example, in eastern Cardiff, Risca and Ystrad Mynach.

We have worked with others to produce this CFMP, including: local authorities, water companies, environmental groups, land owners and land managers. Whilst there is broad support for this plan, local authorities have raised concerns about limited resources, prioritisation and the potential impact on current development and regeneration proposals. Also, land managers have raised concerns about how flood risk is managed in rural areas. 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.

This is a summary of the main CFMP document. If you need to see the full document, an electronic version may be obtained by emailing enquiries@environment-agency.gov.uk.

Chris Mills
Director Wales
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Image: The River Rhymney, New Tredegar
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 catchments. CFMPs should be used to inform planning and decision making by key partners such as:

- the Environment Agency, who will use the plan to guide decisions on investment in further plans, projects and actions;
- local authorities, who can use the plan to inform spatial planning activities and emergency planning;
- • internal drainage boards, water companies and other utility companies to help plan their activities in the wider context of the catchment;
- transportation planners; who can use the plan to inform their activities;
- land owners, farmers and land managers who 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

Policy planning
- CFMPs and SMPs.
- Action plans define requirement for delivery plans, projects and actions.

Policy delivery plans (see note)
- Influence spatial planning to reduce risk and restore floodplains.
- Prepare for and manage floods (including local Flood Warning plans).
- Managing assets.
- Water level management plans.
- Land management and habitat creation.

Projects and actions
- Make sure our spending delivers the best possible outcomes.
- Focus on risk based targets, for example numbers of households at risk.

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

The Eastern Valleys CFMP is located within South Wales. It covers an area of approximately 490 km² and includes approximately 175,000 properties. Map 1 shows the location and extent of the CFMP area.

The area is largely rural, interspersed with urban areas located along the narrow valleys. These settlements are constrained by the steep nature of the valley sides. Around 15 per cent of the area is urbanised and main towns include Caerphilly, Tredegar, Ebbw Vale, Abertillery, Risca, Blackwood and part of the capital city, Cardiff to the south.

There are 122 kilometres of main rivers including the Rhymney, Ebbw and Sirhowy which run from north to south. The Rhymney flows into the Severn Estuary, the Ebbw flows into the Usk Estuary, and the Sirhowy is a major tributary of the Ebbw. Upland parts of the catchments are steep, mountainous and fast responding. The profile flattens out downstream to become wider, lowland floodplains with gentler meanders.

The main land uses in the area are improved grassland and shrub heath. Agriculture and forestry are important land uses in some parts of the Eastern Valleys, along with the urban areas and industrial developments in Caerphilly and Cardiff.

The coastal and estuarine environments in the Eastern Valleys contain a number of important and diverse habitats and species, including three internationally designated conservation areas. The Severn Estuary is an important Ramsar site, Special Protection Area and Special Area of Conservation.

“The deep, narrow valleys have constrained development to the river corridors.”

↑ River Ebbw flood alleviation scheme, Risca
Map 1. Location and extent of the Eastern Valleys CFMP area
Current and future flood risk

Overview of the current flood risk

Flood risk is the combination of two components; the likelihood (or probability) of a particular flood event occurring and the consequence (or impact) that the flood event would have if it occurred.

The probability of a flood event is the likelihood of a flood of that size occurring within a one year period. It is described as an annual exceedance probability (AEP) and is expressed as a percentage. For example, a 1% AEP flood event has a one per cent chance or 0.01 probability of occurring in any one year.

Unless otherwise stated, numbers in this report are based on the 1% AEP river flood event. More extreme events can occur at any time. The likelihood of an extreme event occurring is small, although the consequences are potentially very serious, particularly where defences could be overtopped.

The Eastern Valleys CFMP area has experienced severe flooding in the past. The largest recent events to affect the Eastern Valleys catchments were in December 1960, December 1979, October 1998 and October/November 2000.

The most widespread flooding in the last 40 years happened on 27 and 28 December 1979. Several thousand properties flooded across South Wales and in many cases rivers reached levels that remain the highest on record. Bedwas, Cardiff, Machen, New Tredegar, Risca and Ystrad Mynach were affected.

The sources of flood risk are:

- **river flooding** occurs throughout the whole CFMP area, particularly where rivers meet in areas such as Risca, where the River Sirhowy joins the River Ebbw and in Caerphilly where Porset Brook joins the River Rhymney;

- **tidally influenced river flooding** can occur when extreme tidal events coincide with high river flows. This has a significant effect in Cardiff (from the River Rhymney), Bassaleg and Tredegar Park (from the River Ebbw) and the Wentlooge Levels (from the River Ebbw);

- **surface water flooding** is identified as being a risk in communities with large impermeable areas such as Cardiff and Caerphilly. The highest risk locations are in the steep upper catchments, for example New Tredegar and Ebbw Vale;

- **sewer flooding** is identified as a risk in areas of Cardiff and the Rhymney Valley;

- **groundwater flooding** information is sparse, but taking in to account the underlying geology in this area, we do not consider groundwater flooding to be a significant or widespread flood risk issue.

What is at risk?

CFMPs assess how flood risk is likely to change in the next 100 years. They do this at a strategic level and not at a detailed, local level.

We used computer models to simulate river flows and produce indicative numbers of properties, infrastructure and environmental features at risk. These models take in to account the benefit of current flood defences. Where applicable, tidal influences on river flows have also been modelled. Where models are not available we have based our flood risk estimates on our Flood Maps, which do not include flood defences. Numbers produced are sufficient for the purposes of the CFMP only.

There are currently approximately 2,000 properties at risk from a 1% AEP flood event in the catchment. This means that approximately one per cent of properties within the catchment are at risk from flooding.

Flooding has an impact on some infrastructure, including electricity sub-stations, schools and numerous transport routes.

There are no international or European designated sites at risk from the 1% AEP flood event and only three sites of special scientific interest have been identified as being affected by flooding. Three scheduled monuments are at risk.
Where is the risk?

To assess flood risk at a strategic level we have identified a number of key locations where we have carried out a more detailed analysis of flood risk. These are presented in Table 1 and Map 2. This is not an exhaustive list of locations. Flood risk in all other areas has been considered in the development of the CFMP.

The highest numbers of properties at risk from a 1% AEP flood event are located within the Rhymney catchment and include the areas of Caerphilly, Cardiff, New Tredegar and Ystrad Mynach. These areas contain districts which are classed as the most socially vulnerable to flooding in the 1% AEP flood event.

We recognise there is potential risk from surface water and groundwater flooding in some areas of the CFMP, however there is limited information currently available.

Table 2 lists some of the infrastructure currently at risk.

![River Rhymney flood alleviation scheme, Ystrad Mynach](image)

Table 1. Key locations currently at risk in a 1% AEP flood event

<table>
<thead>
<tr>
<th>Number of properties at risk</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 1,000</td>
<td>None</td>
</tr>
<tr>
<td>500 to 1,000</td>
<td>None</td>
</tr>
<tr>
<td>100 to 500</td>
<td>Caerphilly, Ebbw Vale, New Tredegar, Risca, Ystrad Mynach</td>
</tr>
<tr>
<td>50 to 100</td>
<td>Cardiff, Cwm, Ynysddu</td>
</tr>
<tr>
<td>25 to 50</td>
<td>Abertillery, Machen</td>
</tr>
</tbody>
</table>

Table 2. Infrastructure currently at risk in a 1% AEP flood event

- 6 electricity sub-stations
- 5 schools
- 6 health centres
- 2.5 kilometres of ‘A’ roads
How we currently manage the risk in the catchment

We can split the work we do to manage flood risk into two types:

- work which helps us to reduce the likelihood of a flood occurring, and
- work which helps us to deal with the consequences of flooding.

In the past, we have focussed on reducing the likelihood of flooding by building flood defences. Other measures have been used but not as a primary response to flood risk. It is now widely recognised that managing flood risk to provide safe and sustainable communities will require more emphasis on the management of the consequences of flooding. This will include:

- promoting awareness of flooding so that organisations, communities and individuals are aware of the risk and are better prepared to take action in time of flood;
- providing flood warning services to those at risk, to enable them to take action;
- improved incident and emergency response by the emergency services and by those at risk from flooding;
- encouraging land use planning to take account of flood risk in determining the location, layout and design of new development;
- flood proofing properties and infrastructure to improve the resilience (reducing the damage from flood water) and the resistance (keeping water out) to avoid harm.

In this CFMP area, current flood risk management is mainly reliant on flood warning, development control and local defences at communities such as Risca and New Tredegar.
Some of the ways in which we currently manage risk in the catchment include:

- **flood risk mapping and data management** (understanding the risks now and in the future);
  Flood risk mapping is fundamental to understanding flood risk and managing it effectively.
  A number of studies have recently been undertaken in order to better understand flood risk and improve the quality of our Flood Maps. These include detailed hydraulic modelling on the River Ebbw (between Abercarn and Risca) and the River Rhymney between Ystrad Mynach and Machen.

- **strategic planning and development control** (managing future risk and adapting to climate change);
  CFMPs and SMPs are an important part of strategic planning allowing us to look at a range of strategic measures. These include looking for opportunities to reduce run-off through better rural land management and restoration of floodplains through redevelopment of properties and infrastructure.
  We work with local authorities to ensure development issues address flood risk. Recently we have worked with Cardiff Council to help them produce a Strategic Flood Consequence Assessment which will support their local development plan.

- **asset management and maintenance** (managing current risk);
  We build, operate and maintain flood defences, for example, a flood alleviation scheme has recently been built at New Tredegar.
  We maintain approximately 13 kilometres of river defences which include culverts, walls and embankments. These defences are not continuous, but in areas which are most at risk of flooding.

- **flood forecasting and warning** (flood event management);
  We use the latest technology to monitor rainfall, river levels, tides and sea conditions and use this information to produce flood warnings.

- **flood incident management** (responding to flooding events);
  Emergency response to flood events is mainly co-ordinated through Civil Contingency arrangements and Local Resilience Forums.
  Our role is to advise our partners through these arrangements. We support and participate in emergency response exercises.
The impact of climate change and future flood risk

Future flood risk will be influenced by climate change, changes in land use (for example urban development) and rural land management. Sensitivity testing identified that the main driver of change to future flood risk is climate change, although increases in urban extent are also predicted to have an effect.

The following scenario was used to analyse future flood risk:

- 20 per cent increase in river flows;
- a total sea level rise of one metre by the year 2100;
- urban development changes based on a low projection of development rate.

Flood risk in the Eastern Valleys will increase in the future. This is likely to be due to the overtopping of existing flood defences, affecting large numbers of properties.

Assuming that the current level of flood risk management continues, we estimate that by 2100 the number of properties at risk from the 1% AEP flood event will increase, from approximately 2,000 to around 7,800, unless actions are taken to manage the increasing risks.

Figure 2 shows the difference between current and future flood risks from a 1% AEP flood event, assuming current management activities. The most significant increases in future risk occur in Cardiff, Risca and Ystrad Mynach.

Figure 2. Current and future (2100) numbers of properties at risk from a 1% AEP flood event
The locations at greatest risk of flooding in the future are parts of Cardiff, Risca and Ystrad Mynach. Future flood risk is not just limited to these areas though; flooding will increase in other areas across the Eastern Valleys. The locations at greatest risk in the future are shown in Table 3.

Increased flooding in the future is unlikely to cause a large increase in the number and area of environmental sites at risk.

We expect surface water and groundwater flooding will increase. Organisations will need to work together to investigate and manage this flood risk in the future.

The most notable increase in risk to infrastructure is the number of emergency services (increased from 0 to 6), electricity substations (increased from 6 to 19) and hospitals (from 0 to 2). These are shown in Table 4.

### Table 3. Key locations at risk in a future (2100) 1% AEP flood event

<table>
<thead>
<tr>
<th>Number of properties at risk</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 1,000</td>
<td>Cardiff, Risca</td>
</tr>
<tr>
<td>500 to 1,000</td>
<td>Ystrad Mynach</td>
</tr>
<tr>
<td>100 to 500</td>
<td>Abertillery, Bassaleg and Tredegar Park, Caerphilly, Ebbw Vale, Llanhilleth, Machen, Newbridge, New Tredegar</td>
</tr>
<tr>
<td>50 to 100</td>
<td>Bedwas, Cwm, Ynysddu</td>
</tr>
<tr>
<td>25 to 50</td>
<td>None</td>
</tr>
</tbody>
</table>

### Table 4. Infrastructure at risk in the future (2100) 1% AEP flood event

- 19 electricity sub-stations
- 3 police stations
- 1 fire station
- 2 ambulance stations
- 11 schools
- 6 health centres
- 2 hospitals
- 6.5 kilometres of ‘A’ roads
Future direction for flood risk management

Approaches in each sub-area

We have divided the Eastern Valleys catchments into seven 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. These are shown in Map 3 and Table 5.

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. Policy analysis and selection is based on flood risk across the entire CFMP area and not just the key locations referred to earlier.

Map 3. Sub-areas in the Eastern Valleys CFMP
Table 5. 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.
Cardiff

Our key partners are:
- Cardiff Council
- Local Communities
- Dŵr Cymru Welsh Water
- Emergency services

The issues in this sub-area

Cardiff is the capital city of Wales and the main urban area in the Eastern Valleys. It has a high population density and is the centre for employment and urban growth.

Flood risk is primarily from river flooding with tidal risk affecting lower parts of the River Rhymney and Roath Brook. Localised surface and sewer flooding are also an issue.

Approximately 310 properties are currently at risk from the 1% AEP river flood event and 0.5% tidal flood event. This rises to around 2,600 properties in the future. The majority of the increased flood risk comes from the lower reaches of Roath Brook.

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.

Overtopping of defences, now or in the future, by extreme flood events could have serious consequences. We will continue to maintain our defences, but it may not be justifiable or acceptable to increase their height in the future.

The outcome we seek is a complementary set of flood risk management actions by all partners at a local community level. These will include:

- increased emphasis on actions to manage the consequences of flooding from all sources;
- increased community and individual awareness of their flood risks and adoption of actions both can take to help themselves.

Actions to implement the policy include:

Encourage and support our partners to produce local long term plans to manage all sources of flooding to Cardiff, particularly the Roath Brook area and lower Rhymney. These plans should include an assessment of the consequences of flooding, including from overtopping of defences, and actions to manage these. They should consider future options and investment needs for defences, emergency planning and response, and development control issues to avoid inappropriate development in high risk areas.

We will continue to maintain our defences and provide flood warnings.

Engage with and advise the local community to encourage people at risk to take action to help themselves.

Encourage and support studies by partners to identify surface water and sewer flooding issues and management options.

🔍 Lower River Rhymney at Began Farm
Bedwas and Machen

Our key partners are:
- Caerphilly County Borough Council
- Newport City Council
- Local Communities
- Emergency services

The issues in this sub-area

This is mainly a rural area with the small communities of Bedwas and Machen located close to the River Rhymney. Bedwas has a high proportion of industrial properties. The main source of flood risk is from the River Rhymney. Localised surface water flooding is also an issue.

Approximately 120 properties are currently at risk from the 1% AEP flood event, rising to around 290 properties in the future. The increased flood risk will affect both Bedwas and Machen.

The vision and preferred policy

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

Our vision is to ensure all our actions are proportionate to the risks, now and in the future.

We will continue to maintain our defences and the river channels, but it may not be justifiable to increase their height in the future. Our vision also includes:

- increased emphasis on actions to manage the consequences of flooding;
- increased community and individual awareness of their flood risks and adoption of actions both can take to help themselves.

Actions to implement the policy include:

- Review and rationalise our current actions to ensure they are appropriate and targeted to locations of greatest risk.

- Encourage and support our partners to produce local long term plans to manage all sources of flooding to Bedwas and Machen. These plans should include an assessment of the consequences of flooding, including from overtopping of defences, and actions to manage these. They should consider future options and investment needs for defences, emergency planning and response, and development control issues.

- Engage with local communities to encourage people at risk to help themselves and increase the uptake of flood warning, resistance and resilience measures.

- Investigate options to improve the flood forecasting and flood warning service in the River Rhymney catchment.

↑ Mid River Rhymney at Machen
Rhymney Corridor

Our key partners are:

Caerphilly County Borough Council
Local Communities
Dŵr Cymru Welsh Water
Emergency services

The issues in this sub-area

This urban valley area includes the settlements of Caerphilly, Ystrad Mynach, Llanbradach, Blackwood, Bargoed and New Tredegar.

Caerphilly is the second largest urban area in the Eastern Valleys with a high population density and significant future growth predictions.

The main source of flood risk is from the River Rhymney, Porset Brook, Nant y Aber, and Nant Cylla.

Significant flood water depths and velocities could be experienced with little flood warning time. Surface water flooding is also a local issue, particularly in urban areas.

Approximately 720 properties are currently at risk from the 1% AEP flood event, rising to around 1,310 properties in the future. Properties as well as infrastructure are at risk in Caerphilly, Ystrad Mynach and New Tredegar.

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.

We will continue to maintain our defences, but it may not be justifiable or acceptable to increase their height in the future.

The outcome we seek is a complementary set of flood risk management actions by all partners at a local community level. These will include:

- increased emphasis on actions to manage the consequences of flooding from all sources;
- increased community and individual awareness of their flood risks and adoption of actions both can take to help themselves.

Actions to implement the policy include:

Encourage and support our partners to produce local long term plans to manage all sources of flooding, particularly at Caerphilly, Ystrad Mynach and New Tredegar. These plans should include an assessment of the consequences of flooding, including from overtopping of defences, and actions to manage these. They should consider future options and investment needs for defences, emergency planning and response, and development control issues.

We will continue to maintain our defences and provide flood warnings.

Encourage and support studies by partners to identify surface water and sewer flooding issues and management options, particularly at Caerphilly and Ystrad Mynach.

Engage with local communities to encourage people at risk to help themselves and increase the uptake of flood warning, resistance and resilience measures.

Investigate options to improve the flood forecasting and flood warning service in the River Rhymney catchment.

↑ River Rhymney, New Tredegar, 5th September 2008, during construction of flood alleviation scheme
Mid and Upper Reaches

Our key partners are:
- Blaenau Gwent County Borough Council
- Caerphilly County Borough Council
- Local communities

The issues in this sub-area

This area is mainly rural in the upper reaches of the Sirhowy, with smaller urban settlements in the middle reaches. The main settlements are Ynysddu, Rhymney, Tredegar and Blackwood. Flood risk is primarily from, the Rivers Rhymney and Sirhowy, which respond quickly to rainfall. Localised surface water flooding is also an issue.

Approximately 90 properties are currently at risk from the 1% AEP flood event, rising to around 150 properties in the future. The majority of properties affected by flooding are in Ynysddu.

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.

Current flood risk is low in comparison with other areas in the Eastern Valleys and is not expected to increase significantly in the future.

Our vision is to reduce the overall level of flood risk management activity over time. We will follow a risk based approach to rationalise our current activities and target our actions to locations of greatest risk.

Actions to implement the policy include:

Work with our partners to determine how the policy of reducing actions is most appropriately communicated and implemented.

Engage with local communities to encourage people at risk to help themselves and increase the uptake of flood warning, resistance and resilience measures. In particular at Ynysddu.

Work with partners to investigate the flood risk in Ynysddu. If appropriate, encourage and support our partners to produce a plan to manage the current and future risks.

↑ River Sirhowy at Ynysddu
Upper Ebbw

Our key partners are:
- Blaenau Gwent County Borough Council
- Local communities
- Dŵr Cymru Welsh Water
- Emergency services

The issues in this sub-area
This area covers the upper catchment of the River Ebbw and contains the communities of Ebbw Vale, Llanhilleth, Cwm and Abertillery. The main source of flood risk is from the River Ebbw (Fawr and Fach), which is a fast responding river catchment providing short flood warning times. There is also high risk of locally rapid surface water flooding due to the steep slopes.

There are defences at Cwm, Abertillery and Llanhilleth. Approximately 300 properties are currently at risk in the 1% AEP flood event, rising to around 860 properties in the future. People, properties, infrastructure and community assets are at flood risk in the urban areas.

Overtopping of defences, now or in the future, by extreme flood events could have very serious consequences.

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.

Our vision includes improved integration of actions by all parties to manage all sources of flood risk, particularly local surface water and sewer flooding.

We will continue to maintain our defences, but it may not be justifiable to increase their height in the future. Our vision also includes:
- increased emphasis on actions to manage the consequences of flooding;
- increased community and individual awareness of their flood risks and adoption of actions both can both take to help themselves.

Actions to implement the policy include:
Encourage and support our partners to produce local long term plans to manage all sources of flooding, particularly at Cwm, Abertillery and Llanhilleth. These plans should include an assessment of the consequences of flooding, including from overtopping of defences, and actions to manage these. They should consider future options and investment needs for defences, emergency planning and response, and development control issues.

Encourage and support studies by partners to identify surface water and sewer flooding issues and management options, particularly at Ebbw Vale, Llanhilleth, Abertillery and Cwm.

Engage with and advise the local community to encourage people at risk to take action to help themselves.

Encourage and support owners and operators of important infrastructure to plan for, and manage, their current and future flood risks.
Ebbw Corridor

Our key partners are:
- Caerphilly County Borough Council
- Newport City Council
- Local communities
- Dŵr Cymru Welsh Water

The issues in this sub-area

This is mainly an urban area including Risca, Crosskeys, Bassaleg, Tredegar Park and Newbridge. The main sources of flooding are river and tidally influenced river flooding. Localised surface water flooding is also an issue.

Approximately 450 properties are at currently risk from the 1% AEP river flood event and 0.5% tidal flood event. This rises to around 2,290 properties in the future. The majority of flood risk is in Risca where there are a significant number of residential and commercial assets at risk. This increase in risk is the highest in the Eastern Valleys and is primarily due to overtopping of defences.

Overtopping of defences, now or in the future, by extreme flood events could have very serious consequences.

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.

Our vision includes improved integration of actions by all parties to manage all sources of flood risk, particularly local surface water and sewer flooding.

We will continue to maintain our defences, but it may not be justifiable to increase their height in the future. Our vision also includes:

- increased emphasis on actions to manage the consequences of flooding;
- increased community and individual awareness of their flood risks and adoption of actions both can take to help themselves.

Actions to implement the policy include:

Encourage and support our partners to produce local long term plans to manage all sources of flooding, particularly at Risca. These plans should include an assessment of the consequences of flooding, including from overtopping of defences, and actions to manage these. They should consider future options and investment needs for defences, emergency planning and response, and development control issues.

We will continue to maintain our defences and provide flood warnings.

Encourage and support studies by partners to identify surface water and sewer flooding issues and management options, particularly at Risca.

Engage with and advise the local community to encourage people at risk to take to action to help themselves.

Encourage and support owners and operators of important infrastructure to plan for, and manage, their current and future flood risks.
Wentlooge Levels

Our key partners are:
Cardiff Council
Newport City Council
Local communities
Caldicot and Wentlooge Levels Internal Drainage Board

The issues in this sub-area
This is a coastal area with numerous small villages and isolated properties dispersed between a network of reens and drains. There are no main rivers in this area with flood risk coming from the reens and drains. There is also a tidally influenced flood risk from the River Ebbw.

There are currently no properties at risk from the 1% AEP river flood event; however, there are approximately 10 properties at risk from the 0.5% AEP tidal flood event. This figure does not increase for the future 1% AEP river flood event, but rises to around 230 properties in the future for the 0.5% AEP tidal flood event.

The Wentlooge Levels is a very sensitive internationally and nationally designated environmental area. Sea level rise in the future will significantly increase the number of properties at risk and will impact on the environmentally designated sites. Any significant change in the water environment will impact on the valuable natural habitats and species. We need to improve our understanding of flood risks in this area.

The vision and preferred policy
Policy Option 3 – areas of low to moderate flood risk where we are generally managing existing flood risk effectively.

Our vision is to establish a long term strategic approach to flood risk management, developed and agreed with our partners. This will consider all sources of flooding, including from the sea and will balance the needs of people, property and infrastructure as well as the important environmental designations.

Actions to implement the policy include:

Encourage and support our partners to produce local long term plans to manage all sources of flooding. These plans should include an assessment of the consequences of flooding, including from overtopping of defences, and actions to manage these. They should consider future options and investment needs for defences, emergency planning and response, and development control issues. These plans will be informed by the Severn Estuary SMP and the Severn Estuary Flood Risk Management Strategy.
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Map of CFMP policies

Legend

Preferred Policy

- Policy 2
- Policy 3
- Policy 4
- Policy 5
- River Network

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Sub-area 1 – Cardiff
Flood risk is high and is expected to increase significantly into the future. Cardiff is an economic hub with high population densities and significant future growth predictions. Flood risk management activity needs to increase to manage this risk.

Sub-area 2 – Bedwas and Machen
Flood risk is relatively low in comparison to the rest of the Eastern Valleys and is not expected to increase significantly in the future. Where risk does increase it will be managed by reprioritising current flood risk management activities.

Sub-area 3 – Rhymney Corridor
Flood risk is high and is expected to increase significantly into the future. The risks present severe consequences for property and infrastructure. Flood risk management activity needs to increase to manage this risk.

Sub-area 4 – Mid and Upper Reaches
Flood risk is low and not expected to rise significantly in the future. Flood risk management activities will reduce over time in a managed way but flood warning and resilience measures will continue. We will continue to manage flood risk in Ynysddu as appropriate.

Sub-area 5 – Upper Ebbw
Flood risk is relatively low but is expected to rise significantly into the future. This combined with the short warning times present risks of harm to life. Flood risk management activity will need to increase to sustain the current level of risk into the future.

Sub-area 6 – Ebbw Corridor
Flood risk is moderate but is expected to rise significantly into the future. The future risks present severe risks to property and infrastructure. Flood risk management activity will need to increase to sustain the current level of risk into the future.

Sub-area 7 – Wentlooge Levels
Current and future levels of flood risk from the reens and drains are negligible. Tidally influenced flood risk is expected to rise in the future. This area is a sensitive environmental site. We need to better understand the flood risks and the impact of flood management activities on the site.
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incident hotline 0800 80 70 60 (24hrs)
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