



CYNGOR SIR
CEREDIGION
COUNTY COUNCIL



LOCAL FLOOD RISK MANAGEMENT STRATEGY
SUMMARY DOCUMENT
OCTOBER 2014

Ceredigion County Council's Local Flood Risk Management Strategy

aims to help everyone who is affected by flooding, or who is responsible for managing the risk of flooding, to better understand flood risk within the County, and will focus on the 'local' sources of flooding, such as surface water, ordinary watercourses and groundwater.

Introduction

When flooding occurs, it matters little what type of flooding is causing the problem and so the Strategy aims to provide information about the various forms of flooding and organisations involved in all aspects of flood risk management and their relevant functions.

It is vital that we work alongside other organisations, residents and communities to manage flood risk in order to reduce its impacts through better planning and management, and targeted investment.

Just as the risks presented by flooding and coastal erosion are changing, so must our response. It will not be possible to continue to build bigger drainage systems and defences. In recent years Welsh Government has moved towards a response rooted in risk management, providing a holistic approach to managing the risks, consequences and impacts.

The money available for flood risk management is never going to be enough to deal with all existing flood risks and the increasing future risk brought about by a changing climate, and even if funding constraints were not an issue, it would still not be possible to prevent all floods or solve all concerns.

Simply constructing more and higher defences is not a sustainable solution environmentally, economically or socially and in some cases it can actually

increase the risk to life and injury should they fail. The location and structure of defences can sometimes harm the wider environment, and constructing and maintaining defences is becoming more expensive, leaving less money available to protect other communities.

Both the *Foresight: Future Flooding Study* and the *Stern Review on the Economics of Climate Change* recommended a move towards a risk management approach to flooding and coastal erosion, which goes further than defence alone.

Working with natural processes can contribute to a sustainable ecosystem management approach and also help deliver the requirements of the Water Framework Directive.

Flood risk within Ceredigion

Flooding is quite simply defined as when water covers land that is normally dry. The nature of flood risk is extremely varied and widespread. Ceredigion has an extensive coast, a network of rivers, high and low lying land, and numerous river valleys, which, when combined with a few urbanised areas, means it is at risk of flooding from a variety of sources.

The main sources of flood risk which are covered by the Strategy include:

Surface water flooding (pluvial flooding) - when high intensity rainfall generates runoff which flows over the surface

Groundwater flooding - when water held within rocks beneath the surface of the ground rise above the surface

River flooding (fluvial flooding) - when a watercourse cannot cope with the volume of water

It is often difficult to establish a single, precise cause for flooding and that is why

a holistic approach needs to be taken.

A number of factors will lead to higher probability of flooding in the future and more serious potential consequences:

- climate change will lead to more frequent and severe extreme weather, rising sea levels, and therefore to more extreme floods
- deterioration in the condition and performance of existing drainage infrastructure and flood defence structures over time
- changes in land use, will result in an increase in impermeable surfaces and loss of vegetation, causing increased levels of runoff

Legislation

The Flood Risk Regulations 2009 require all Councils (including Ceredigion County Council) to produce a Preliminary Flood Risk Assessment, identifying areas where people are at risk of surface, ground and ordinary watercourse flooding.

The Preliminary Flood Risk Assessment is a high level screening exercise that brings together information from a number of sources on past and potential flooding to enable Ceredigion County Council to make informed judgments in relation to local flood risk.

Ceredigion County Council's Preliminary Flood Risk Assessment was completed in June 2011, and will be reviewed in 2017.

The Flood and Water Management Act which gained royal assent in April 2010 provides legislation for the management of risks associated with flooding and coastal erosion.

It places a greater responsibility on County Councils in respect of surface

water management, and clearly defines their roles as Lead Local Flood Authorities.

The preparation of the **Strategy** is just one of a number of statutory duties placed upon the County Council under the Act, with the others being a duty to:

- comply with the National Strategy
- co-operate with other authorities
- investigate flooding within its area
- maintain a register of structures likely to affect flood risk
- contribute to sustainable development

Ceredigion's Local Flood Risk Management Strategy

The Welsh Government has produced a *Local Flood Risk Management Strategies* document which provides details on local flood risk management issues that should be considered in the development of Local Strategies, and as a result Ceredigion County Council's Local Flood Risk Management Strategy must specify:

- a) the risk management authorities in the authority's area
 - b) the flood and coastal erosion risk management functions that may be exercised by those authorities in relation to the area
 - c) objectives for managing local flood risk
 - d) measures proposed to achieve those objectives
 - e) how and when the measures are expected to be implemented
 - f) the costs and benefits of those measures, and how they are paid for
 - g) the assessment of local flood risk
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- for the purpose of the strategy
- h) how and when the strategy is to be reviewed
 - i) how the strategy contributes to wider environmental objectives

The main aim of the strategy is to reduce the risk of flooding and the misery and economic damage that flooding causes in a sustainable manner, but also that any flood management activities carried out should aim to enhance the built and natural environment.

Risk Management Authorities

The Flood and Water Management Act identified certain organisations as 'risk management authorities' who have responsibilities associated with flooding, both new ones from the Act itself, and longstanding ones from previous legislation.

Flooding can come from a number of different sources, and the responsibility for managing the risk from these different sources falls with different Risk Management Authorities.

CEREDIGION COUNTY COUNCIL, as the Lead Local Flood Authority, is responsible for taking the lead in managing flood risk from local sources. This includes surface water, ordinary watercourses and ground water, and also where there is interaction between those sources of flooding and flooding from main rivers or the sea.

The main responsibilities of Ceredigion County Council are as:

1. Lead Local Flood Authority
2. Land Drainage Authority
3. Coastal Erosion Risk Management Authority
4. Emergency Planning Authority

5. Highways Authority
6. Planning Authority
7. A Landowner

NATURAL RESOURCES WALES (formerly Environment Agency Wales) has responsibility for managing flood risk from main rivers, reservoirs and the sea, and it also has a strategic overview role for managing all flood and coastal erosion risk. It also plays a key role in protecting and improving the environment.

Natural Resources Wales has powers to carry out maintenance and improvement works on Main Rivers, is responsible for reservoirs in Wales as the Enforcement Authority, is a coastal erosion risk management authority, contributes to the development of multi-agency flood plans, provides advice to planning authorities in relation to development and associated flood risk and provides flood warnings and supports emergency responders when floods occur.

DŴR CYMRU WELSH WATER has responsibility for providing water, and managing the foul and surface water sewerage within Ceredigion.

It has primary responsibility for managing floods from water and sewerage systems, which can include sewer flooding, burst pipes/water mains or floods caused by system failures.

The **NORTH AND MID WALES TRUNK ROAD AGENT** has responsibility for managing flood risk on the A44 and A487 - for all other adopted roads, responsibility lies with Ceredigion County Council.

Although these organisations are responsible for managing flood risk from these sources, they are not liable for any damages caused by flooding. Property owners are responsible for protecting

their own property from flooding along with their responsibilities as riparian owners.

Utility and Infrastructure Providers

Utility and infrastructure providers are not risk management authorities. However they may have assets such as culverts, information about which needs to be shared with flood risk management authorities.

Residents/Landowners/ Businesses

It is the responsibility of householders and businesses to look after their property, and that includes protecting it from flooding. It is important therefore that householders take steps to ensure that their house is protected.

Information on whether households are at risk of flooding can be provided either by Natural Resources Wales (through the Environment Agency website) or Ceredigion County Council.

‘Riparian’ Ownership

Landowners, householders and businesses whose property lies adjacent to a river, stream or ditch are likely to be Riparian Owners with associated responsibilities.

Further information on the rights and responsibilities of Riparian Owners can be found in the ‘Living on the Edge’ document available from the Environment Agency.

Town and Community Councils

Flooding affects communities as well as individuals, and the Community, as much as anyone know the risk that they face, having vital knowledge about the history of flooding in their respective areas.

Town and Community Councils therefore

have an important role to play in communicating flood risk to those who may be unaware of the risk, and to direct those individuals to Ceredigion County Council and Natural Resources Wales.

Local Flood Risk

Floods pose a real risk to life and we have seen deaths across the UK and Europe during the floods of the recent past. The effects, and particularly the impacts on health, can last for months, years or decades depending on the speed and impact of the flood.

The economic impact of flooding on a personal, regional and national level is significant, but perhaps the most marked long-term impact is that on the wellbeing of those who have experienced flooding.

Detailed data on past surface water flooding is limited. Localised floods have and will continue to occur in many areas of the County under severe weather conditions and with climate change these events are likely to be more frequent and severe. The aim is to try to predict and reduce the risks where possible and have emergency plans in place to deal with the exceptionally severe event.

Potential Risk of Flooding

The best information available to the Authority in respect of predicted future flooding is the 1 in 200 year Flood Map for Surface Water produced by the Environment Agency.

This information will be used to identify Flood Risk Areas based on flood risk indicators to determine the impacts of flooding.

The Key flood risk indicators are:

- **Human Health**
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- **Critical Services**
- **Economic Activity**
- **Length of road or rail**
- **Areas of agricultural land**
- **Cultural Heritage**
- **Environment Designated Sites**

It will not be possible to look at every potential flooding location straight away, and it is therefore necessary to prioritise locations where the focus of effort will derive the maximum benefit.

Impact of Climate Change

The impact of climate change on local flood risk is relatively poorly understood, but there is a general consensus amongst climate model projections that high extremes of precipitation are very likely to increase in both magnitude and frequency.

United Kingdom Climate Projections 2009 (UKCP09) provides the most up to date projections of future climate change for the UK with the key findings for Wales predicting that by 2050

- average annual temperatures will increase by 2.3°C
- summer maximum temperatures will increase by 3.4°C
- winter minimum temperatures will increase by 2.5°C
- rainfall will increase in winter on average by 14%, and decrease in summer by 16%
- sea levels around Wales will rise by approximately 20cm
- storm intensity will increase, leading to more severe storms and larger waves

The Welsh Government has produced a *Climate Change Risk Assessment* and a *Climate Change Strategy for Wales*.

These documents present the risks and opportunities from climate change facing the country and how we can prepare for the impacts of climate change.

Managing Local Flood Risk

The move towards flood and coastal erosion risk management in recent years has been made in recognition of the limitations of flood and coastal defence.

It is not possible to prevent all floods, but by working together and employing a range of risk management measures, improvements can be made to the way the impacts and consequences of flooding are managed.

The overarching aim is to reduce the risk to residents and businesses of suffering the misery and economic devastation that flooding can bring.

The *National Strategy for Flood and Coastal Erosion Risk Management in Wales* prepared by Welsh Government sets four overarching objectives for the management of flood and coastal erosion risk in Wales:

- Reducing the impacts on individuals, communities, businesses and the environment from flooding and coastal erosion
- Raising awareness of and engaging people in the response to flood and coastal erosion risk
- Providing an effective and sustained response to flood and coastal erosion events
- Prioritising investment in the most at risk communities

These are supplemented by 11 sub-objectives and further additional measures, some of which are for Lead Local Flood Authorities to deliver in support of the wider Objectives as set out by the Welsh Government.

Environmental Objectives

The main purpose of the Strategy is to set out a framework for implementing flood risk management across Ceredigion.

There is also an opportunity to derive benefit in respect of county and country-wide aspirations in the context of sustainability, environmental and social improvement.

Strategic Environmental Assessment

A Strategic Environmental Assessment is needed to support the Strategy, which appraises the potential environmental impacts of the Strategy and its objectives, prior to its approval and formal adoption.

The Strategic Environmental Assessment provides for high level protection of the environment, by ensuring the integration of environmental considerations and contributes to sustainable development and environmental protection.

Habitats Regulations Assessment

Due to the potential of this strategy to have a significant effect on sites of nature conservation, a Habitats Regulations Assessment was undertaken in parallel with the Strategic Environmental Assessment. The conclusions of the Habitats Regulations Assessment are provided as a summary to the Strategic Environmental Assessment Report.

Water Framework Directive

The Water Framework Directive is the most substantial piece of European water legislation to be produced.

It requires all inland and coastal waters to reach 'good' ecological status by 2015 and it will achieve this by establishing a

river basin structure, within which environmental objectives will be set, including ecological targets for surface water.

Risk management measures have the potential to significantly benefit biodiversity in protecting designated sites and contributing to improving and maintaining these in a favourable condition.

Sustainable Development

The *Flood and Water Management Act* includes a duty for local authorities and highways authorities to contribute to sustainable development in discharging their Flood and Coastal Erosion Risk Management functions.

It does not prescribe a single approach to be followed, but provides a number of suggestions which make a contribution toward the achievement of sustainable development.

Catchment Flood Management Plans

Catchment Flood Management Plans consider all types of flooding, whether from rivers, groundwater, surface water or sewers and are based on a standard approach to ensure that they provide a consistent assessment of flood risk and policy options.

They take into account the likely impacts of climate change, how we use and manage the land, and how areas could be developed to meet our present day needs without compromising the ability of future generations to meet their own needs.

Funding

The risk and consequences of flooding and coastal erosion present a significant financial cost, both to the individuals affected and to the wider Welsh economy.

As the climate changes, the costs and resource level required to keep pace with the risks and consequences of flooding and coastal erosion is expected to increase.

The majority of funding for flood and coastal erosion risk management in Wales comes directly from the Welsh Government.

As the level and nature of risk changes in the future, Welsh Risk Management Authorities will need to find other sources of funding to ensure that communities across Wales receive the levels of funding they need to manage the risks they face.

Ceredigion County Council provides an element of funding from within its budgets to fund studies, reports, and the design of coastal erosion and flood alleviation schemes, as well as making contributions toward the construction costs.

As part of the National Strategy Welsh Government is keen to establish a funding prioritisation methodology for Wales which sets out what projects they will consider for funding and how they will consider and compare them.

It is intended that this will result in the establishment of a single funding scheme for all flood and coastal erosion risk management projects in Wales.
