



Newport City Council
**Local Flood Risk Management
Strategy**

Final | 27 October 2014



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It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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List of Acronyms

CCRA	Climate Change Risk Assessment
CIL	Community Infrastructure Levy
CWLIDB	Caldicot and Wentlooge Levels Internal Drainage Board
DCLG	Department for Communities and Local Government
DCWW	Dŵr Cymru Welsh Water
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EC	European Commission
ERDF	European Regional Development Fund
EU	European Union
FCERM	Flood and Coastal Erosion Risk Management
FDGiA	Flood Defence Grant in Aid
FWMA	Flood and Water Management Act 2010
GIS	Geographical Information Systems
LFRRMS	Local Flood Risk Management Strategy
LLFA	Lead Local Flood Authority
LSSG	Local Services Support Grant
NCC	Newport City Council
NRW	Natural Resources Wales
PAG	Project Appraisal Guidance
PAR	Preliminary Assessment Report
PFRA	Preliminary Flood Risk Assessment
PPW	Planning Policy Wales
RMA	Risk Management Authorities
SAB	SuDS Approval Body
SEA	Strategic Environment Assessment
SFCA	Strategic Flood Consequences Assessment
SMP	Shoreline Management Plan
TAN	Technical Advice Note
UK	United Kingdom
WCMC	Wales Coastal Monitoring Centre

Synopsis

Newport City Council (NCC) is a designated Lead Local Flood Authority (LLFA) under the Flood and Water Management Act (FWMA) 2010 and is therefore required to produce a Local Flood Risk Management Strategy (LFRMS). The strategy scope covers flood risk arising from surface water, groundwater and ordinary watercourses. Addressing flood risk arising from main rivers, sea and reservoirs in Newport is the responsibility of Natural Resources Wales (NRW) and is therefore not included within the LFRMS.

This document identifies the Risk Management Authorities in Newport, the key requirements and contents of the LFRMS, and outlines the high level objectives and measures for implementing the LFRMS. In addition, it identifies the potential sources which could fund the implementation of the LFRMS and discusses the context within which the strategy is required to achieve wider environmental benefits.

1 Introduction

1.1 The need for a local flood risk management strategy

Our climate is changing. Forecasts suggest that we will see higher sea levels, increases in the intensity of rainfall and more frequent flooding. This has already been witnessed by the extent of flooding resulting from extreme events in recent years. The risk to life, the economy and the natural environment will increase. In addition to this, rates of coastal erosion will increase, with more coastal communities facing the risk of loss of land and resources. The *Climate Change Risk Assessment (CCRA)* for Wales, published by the Welsh Government in January 2012 [1], indicates that approximately 23% of the 1,500km long Welsh coastline is eroding. The *National Strategy for Flood and Coastal Erosion Risk Management in Wales (National Strategy)*, published by the Welsh Government in November 2011 [2], states that one in six properties in Wales are at risk of flooding.

It is not possible to prevent flooding or stop coastal erosion as both are natural processes. However, the risks they present and the resulting consequences can be potentially reduced if appropriate steps are undertaken to mitigate and minimise their impacts.

As Lead Local Flood Authority (LLFA), Newport City Council (NCC) has the responsibility to develop, maintain, apply and monitor a strategy for local flood risk management (Local Strategy) arising from surface water runoff, ordinary watercourses, Local Authority regulated reservoirs and groundwater. In addition, NCC has a duty to manage the erosion risk along the Severn Estuary shoreline within the Newport boundary, Natural Resources Wales (NRW) is responsible for leading the management of flood risk arising from the sea and the main rivers, and the sewer operator is responsible for addressing flood risk arising from sewers. Although responsibilities are allocated based on the source of flooding, it is acknowledged that when flooding occurs, those affected by it do not distinguish between the source or the type of flooding. Therefore, greater emphasis is now being placed on all agencies to work in close collaboration to minimise the risk of flooding, and manage the consequences.

This report – the Local Strategy – outlines the strategy of managing local flood risk in Newport and aims to provide a framework in which communities have a greater say in local risk management decisions and to encourage more effective risk management by enabling people, communities, business and the public sector to work together.

To ensure that the management of local flood risk and the management of coastal erosion is holistic, NCC have consulted with its representatives of the departments of Planning, Economic Development, Drainage and Flood Risk, Communications, Highways and Emergency Planning.

1.2 Purpose of the Strategy

This high level strategy aims to provide a framework for the development of specific measures, and decision making, associated with managing local flood risk and coastal erosion in Newport. It has been prepared in accordance with *the Local Flood Risk Management Strategies, Local Strategy*, published by the Welsh Government in November 2011 [3] which provides a structure for preparing a LFRMS.

The specific measures required for mitigating local flood risk and coastal erosion will be identified during subsequent stages of the process, and following publication of the flood hazard maps by the Environment Agency.

Managing flood risk and coastal erosion is a continuous process. The LFRMS will therefore evolve as the understanding of flood risk and coastal erosion develops further.

2 Background

2.1 Legislative context

The *Flood Risk Regulations* came into force in December 2009 and the *Flood and Water Management Act* became law in April 2010. Under these legislations, Newport City Council has been identified as a Lead Local Flood Authority (LLFA) and has been given a number of key responsibilities including the preparation of a LFRMS.

Policy guidance associated with flood risk and development is also contained within *Planning Policy Wales (PPW)* and *Technical Advice Note 15 (TAN15) Development and Flood Risk*. Although PPW and TAN15 Development and Flood Risk do not dictate the requirements for, or provide any guidance on, preparing a LFRMS, the strategy is consistent with the requirements of these documents. In addition to these, the strategy is consistent with the Severn Shoreline Management Plan 2 (SMP 2), referred to in Section 4.3.

Implementation of specific measures shall take into consideration other statutory legislations such as the *Land Drainage Act 1991* and *Coast Protection Act 1949*. The following references do not therefore represent an exhaustive list of legislation and policy guidance documents relevant to Flood and Coastal Erosion Risk Management (FCERM), but represent the key legislation and policy guidance documents which set up the context for producing a LFRMS.

2.1.1 Flood Risk Regulations 2009

The purpose of the *Flood Risk Regulations* is to transpose the European Commission (EC) Floods Directive (2007/60/EC), on the assessment and management of local flood risk, into domestic law in England and Wales and to implement its provisions.

The Regulations require Natural Resources Wales to prepare Directive deliverables associated with flood risk arising from main rivers, sea and reservoirs, and the LLFAs to do the same for flood risk associated with local sources such as surface water, groundwater and ordinary watercourses. In

particular it places duties on Natural Resources Wales and the LLFAs to prepare a number of documents including:

1. Preliminary Flood Risk Assessment (PFRA) report – submitted to the Natural Resources Wales in April 2011 [4].
2. Flood risk and flood hazard maps – to be completed by 22nd June 2013.
3. Flood risk management plans – to be completed by 22nd June 2015.

The PFRA report did not identify any areas of significant flood risk that satisfied the significance criteria set by the Welsh Government and the Department for Environment, Food and Rural Affairs (DEFRA) within the administrative boundary of NCC. As a result, NCC were not required to produce flood risk maps, flood hazard maps or flood risk management plans as part of the PFRA process. However, there is one Indicative Flood Risk Area within Newport in the area of Rogerstone, which is a cross boundary flood risk area shared with the neighbouring LLFA of Caerphilly County Borough Council. Even though this area has been removed from the PFRA process as it was deemed of not having a significant present or future flood risk, this area needs to be reviewed once the flood risk and flood hazard maps are published.

Under the Regulations, NCC will be required to review, and if necessary update, the Preliminary Assessment Report in June 2017.

2.1.2 Flood and Water Management Act 2010

Under the *Flood and Water Management Act 2010*, NCC must develop, maintain, apply and monitor a strategy for local flood risk management. This document – *Newport City Council – Local Flood Risk Management Strategy* sets out to satisfy this requirement.

Local flood risk is defined within the Act as being a flood risk from:

1. Ordinary watercourses (a watercourse that does not form part of main river, includes a lake, pond or other area of water, which flows into an ordinary watercourse)
2. Surface runoff (rainfall or other precipitation which is on the surface or ground and has not entered a watercourse drainage system or public sewer)
3. Groundwater (water that has percolated into the ground and may form underground ponds or streams, which may discharge above ground but lower down the catchment).

Whilst the national leadership role associated with flood risk management continues to rest with Natural Resources Wales, the County Councils and Unitary Authorities assume the role of leading local flood risk management under the Act and shall lead the coordination of relevant agencies during a flood event.

2.1.3 Planning Policy Wales

The land use planning policies of the Welsh Government are set out in the *Planning Policy Wales* (PPW) which is supplemented by a series of Technical Advice Notes (TANs). These national planning policy documents provide a framework for the preparation of the Local Development Plans.

The policy highlights the importance of flood risk as a material consideration when planning land use. The Welsh Government's objectives for sustainable development encourage a move away from flood defence and mitigation of the consequences of flooding for a new development, towards avoiding developing in areas of extreme floodplain. Planning authorities are encouraged to take a precautionary approach when considering new development in an area of extreme floodplain.

In addition to this, the local planning authorities are also encouraged to work closely with the developer, NRW and drainage bodies to minimise the risk of surface water flooding and implement sustainable drainage systems, where deemed appropriate, to help control surface water run-off as close to the source as possible.

2.1.4 Technical Advice Note 15

TAN15 Development and Flood Risk provides guidance on assessing flood risk. It supplements the guidance provided in PPW and provides a framework for assessing fluvial, coastal, surface water and groundwater flooding, and associated risks for any development. The framework is based on precautionary principles which give due consideration to flood risk whilst recognising the need for development. This document also requires that due consideration is given to surface water run-off strategy from a new development. It encourages the implementation of sustainable drainage systems to minimise surface water run-off and hence minimise the risk of surface water flooding.

2.2 The study area

The study area for the preparation of the LFRMS is defined by the administrative boundary of NCC as shown in Figure 1. Newport is located in south east Wales and covers an area of approximately 218 km². It is bordered by four other LLFAs; Monmouthshire County Council, Torfaen County Borough Council, Caerphilly County Borough Council and Cardiff City Council. The study area is within the Severn River Basin District and is served by Dŵr Cymru Welsh Water (DCWW), Caldicot and Wentlooge Level Internal Drainage Board (IDB) and by Natural Resources Wales. In addition, the Flood Risk Management Wales (FRMW) committee advises on flood risk management in the Welsh Region.

3 Scope of the Strategy

3.1 Key Requirements

In order to ensure that the Local Flood Risk Management Strategy is sustainable and holistic, the strategy aims to reduce the social, economic and environmental consequences of local flood risk and coastal erosion. In addition, the strategy needs to be consistent with the following four overarching objectives of the National Strategy [2]:

1. Reducing the consequences for individuals, communities, businesses and the environment from flooding and coastal erosion;
2. Raising awareness of, and engaging people in the response to, flood and coastal erosion risk;
3. Providing an effective and sustained response to flood and coastal erosion events; and
4. Prioritising investment in the most at risk communities.

In order to comply with these objectives, Newport City Council has set its high level strategy measures as discussed in Section 4.4.

According to the requirements of the Act, the strategy only needs to address flood risk arising from local sources, i.e. surface water runoff, groundwater and ordinary water courses. Flood risk arising from sewers is not included within the definition of local flood risk. Under the Act, the management of sewer flood risk is the responsibility of the sewer operator/water company.

It is acknowledged that when flooding occurs, those affected by it, do not distinguish between the source or the type of flooding. However, it is essential to identify the source to ensure that the responsibility for managing the flood risk is clearly allocated. The potential sources of flooding and the organisations that are responsible for managing it in Newport are summarised in Table 3.1.

Table 3.1 – Description of the potential sources of flooding in Newport

Type of Flooding	Description	Management Responsibility
Coastal and tidal flooding	This is flooding resulting from extreme high tides and/or wave action from the sea.	Natural Resources Wales
Main river flooding	This is flooding arising from main rivers or strategic watercourses that are managed by Natural Resources Wales	Natural Resources Wales
Ordinary watercourse flooding	This is flooding arising from local and relatively smaller watercourses that are not managed by Natural Resources Wales	Newport City Council
Ordinary watercourse flooding within the Gwent Levels	This is flooding arising from local and relatively smaller watercourses located in the Gwent levels that are not managed by Natural Resources Wales nor NCC. Flooding arising from these small watercourse may be however linked to tidal conditions	Caldicot and Wentlooge Levels Internal Drainage Board
Reservoir flooding	This is flooding that can be caused as a result of a breach or failure of a reservoir	Dŵr Cymru Welsh Water for public water supply reservoirs. Natural Resources Wales for other reservoirs discharging to main rivers or strategic watercourses. Newport City Council for other reservoirs discharging to ordinary watercourses.
Surface water flooding	This is flooding arising from surface water runoff – often in the form of overland flow – during periods of high rainfall.	Newport City Council
Sewer flooding	This is flooding arising from public sewers. In areas which have combined sewers (i.e. sewers that contain both surface water and sewage) such flooding is often caused during periods of high rainfall due to the limited capacity within the sewer	Dŵr Cymru Welsh Water
Groundwater flooding	This is flooding arising as a result of high water table from beneath the ground.	Newport City Council

3.2 Public Consultations

Successful management of flood risk relies on having a two way dialogue with those affected by flooding and at potential risk of flooding. It is important to

enhance their understanding of the risk and increase awareness. At the same time it is important to understand what is important to them so that measures can be implemented which prioritise the needs of the community.

This strategy involved two phases of consultation. An initial public consultation was undertaken by NCC during November-December 2012 to understand the views of the residents, businesses and other organisations in Newport on local flood risk, and help shape the strategy. The Local Strategy was drafted following the initial consultation, and was subjected to a public consultation during January-February 2013. In addition, Natural Resources Wales, Caldicot and Wentlooge Levels IDB, Dŵr Cymru Welsh Water and the Welsh Government were also invited to comment on the draft. Details of these consultations are discussed below.

3.2.1 Initial Consultation

The aim of the initial public consultation was to understand the public perception on local flood risk. This was undertaken by inviting members of the public, businesses and organisations in Newport to respond to a questionnaire drafted by NCC. The consultation was advertised on NCC's website and provisions were made to allow the responses to be received online.

Responses to the questionnaire were received from eight residents, one representative of an organization (Martin Childs Limited) and one representative of a local community in the Wentlooge levels. No response was received from any other organisation or business. The number of responses to this initial public consultation was low, although in line with other LLFA consultations and the key points of the response are summarised below.

The respondents identified groundwater as being one of the major sources of flooding in their area. Natural Resources Wales have previously stated that the risk of groundwater flooding in Wales is not a major issue, and where groundwater flooding occurs, it is confined to a very local scale. In addition, the Preliminary Flood Risk Assessment undertaken for Newport [4] states that groundwater is not considered to be a significant flood risk and is considered to rise and fall relatively slowly.

Another major source of flooding identified by the respondents in the area has been from small watercourse (small ditch/stream) possibly due to blockages. NCC will investigate this further with the aim of clarifying the source of flooding.

Only one respondent has been affected by flooding, two more are at risk of flooding but have never experienced it. These respondents are most concerned about damage to property and personal possessions, local amenities and the distress caused due to flooding.

In general, the respondents identified the need for better coordination of response from the various agencies during a flood incident, mechanisms for reporting a flood incident and better support to deal with the aftermath following a flood incident

The respondents expressed the view that funding contribution towards flood risk management schemes should be made by developers, local authorities, the national government and the EU.

The objectives of the strategy set by NCC and discussed in Section 4.4 have incorporated the feedback received from the initial public consultation. Further consultation will be undertaken by NCC during the subsequent stages of the development of the measures as noted in the following section.

3.2.2 Consultation on the Local Strategy Draft

A questionnaire prepared by NCC was made available to enable residents and businesses in Newport to provide feedback and comment on the Local Strategy draft. Similar to the initial public consultation, provisions were made to allow the responses to be received online – via NCC’s website – and on paper copies posted to NCC’s offices.

No response to the questionnaire was received by either the residents or businesses from Newport. However, comments on the draft were received from the NRW and the Caldicot and Wentlooge Levels Internal Drainage Board. The key points of the responses can be summarised as follows:

- Both NRW and Caldicot and Wentlooge Levels Internal Drainage Board are satisfied with the overall contents of the strategy. It is accepted that at the time of preparing this strategy, Newport may not have all the information required to identify specific details associated with the proposed measures, or undertake cost and benefit analysis of those measures.
- NRW recommended including further details, including clarification on how the Strategic Environmental Assessment assesses the Local Strategy and test the significance of environmental effects and how activities will be evaluated and monitored as part of the Local Strategy.

The response to the consultation on the Local Strategy draft has been incorporated within this document. Further consultation will be undertaken by Newport during subsequent stages of development of the measures as noted in the following section.

3.2.3 Further Consultations

Additional public consultation(s) will be undertaken when specific measures for mitigating local flood risk and coastal erosion are identified during subsequent stages. These are likely to be held within the communities where such specific measures are proposed to be implemented.

As part of this strategy, NCC will also undertake appropriate exercises to increase flood risk awareness across Newport and provide further guidance and information on managing such risk and minimising damage.

4 Contents of the Strategy

In accordance with the requirements of the Act, the following items are included within this strategy and are further discussed below.

1. The Risk Management Authorities within Newport City Council;
2. The flood and coastal erosion risk management functions that may be exercised by those Authorities in relation to the area;
3. The assessment of local flood risk for the purpose of the strategy;
4. The objectives for managing local flood risk;
5. The measures proposed to achieve those objectives;
6. How and when the measures are expected to be implemented;
7. The costs and benefits of those measures, and how they are to be paid for;
8. How and when the strategy is to be reviewed; and
9. How the strategy contributes to the achievement of wider environmental objectives.

4.1 Risk Management Authorities and their Functions

When exercising their flood or coastal erosion risk management functions, or in exercising any other function in a manner that may affect flood or coastal erosion risk, all Risk Management Authorities (except water companies), are required to act in a manner consistent with both the Local and National Strategies, and any associated guidance.

In exercising any other function in a manner which may affect a flood risk or coastal erosion risk, a Welsh Risk Management Authority must have regard to both the National and Local Strategies and any associated guidance.

Effective joint working between Risk Management Authorities (RMAs) is fundamental to the effective delivery of the obligations under the Act. This is appreciated within the Act itself, which imposes a duty on all RMAs to co-operate in order to facilitate partnership working, the sharing of information and enhance communications.

In Newport, the following bodies are designated as the Risk Management Authorities under the Act.

- Newport City Council
- Natural Resources Wales
- Dŵr Cymru Welsh Water
- Caldicot and Wentlooge Levels Internal Drainage Board

The statutory duties of these Authorities are noted in this section of this report. In addition to the statutory duties, the Authorities also have the following responsibilities under the provisions of the Act:

- Act in a manner consistent with the local strategy and the National Strategy; and
- Co-operate with, and provide information to, other Risk Management Authorities.

4.1.1 Newport City Council

Under the Act, NCC is designated as the Lead Local Flood Authority and are responsible for leading the management of flood risk arising from local sources. This responsibility is also replicated by the Regulations, under which NCC successfully submitted the Preliminary Assessment Report in April 2011 [4] as part of the Preliminary Flood Risk Assessment process.

In their role as the Lead Local Flood Authority, NCC has the following statutory duties.

- the duty to prepare a Local Flood Risk Management Strategy;
- the duty to comply with the National Strategy;
- the duty to co-operate with other Authorities, including sharing data;
- the duty to investigate all flooding within its administrative boundary, insofar as it is consider necessary or appropriate;
- the duty to maintain a register of structures and features likely to affect flood risk; and
- the duty to contribute to sustainable development.

In addition to the statutory duties, NCC also has permissive powers to undertake the following.

- Request information;
- Designate certain structures or features that affect flood or coastal erosion risk;
- Expansion of powers to undertake works to include broader risk management actions; and
- The ability to cause flooding or coastal erosion under certain conditions.

In addition, NCC is also required to take on the role of the Sustainable Drainage Systems Approval Body (SAB).

4.1.2 Natural Resources Wales

As a result of the Act, the Natural Resources Wales has assumed a dual role:

- Operational responsibilities for flooding from main rivers, the sea and coastal erosion.

- Oversight responsibilities in relation to all flood and coastal erosion risk management in Wales, including flood risk arising from local sources.

As part of the oversight role, it is required to provide technical guidance and support to other Risk Management Authorities. Natural Resources Wales will also be the sole Risk Management Authority responsible for monitoring and reporting on the implementation of the National Strategy.

The Act places a number of statutory duties on Natural Resources Wales including:

- Co-operating with other authorities, including sharing data.
- Reporting to the Minister on flood and coastal erosion risk in Wales including the application of the National Strategy.
- The establishment of Regional Flood and Coastal Committees.

In addition to the statutory duties, NRW also has the following permissive powers:

- Power to request information;
- The ability to raise levies for local flood risk management works, via the Regional Flood and Coastal Committees;
- Power to designate certain structures or features that affect flood or coastal erosion risk;
- The expansion of powers to undertake works to include broader risk management actions
- The ability to cause flooding or coastal erosion under certain circumstances.

It should be noted that some of the permissive powers provided to NRW under the Act are the same as the permissive powers provided to Newport City Council. The two Authorities will therefore work closely to ensure that the execution of their permissive powers does not result in duplication of effort.

Under the Regulations, Natural Resources Wales also take on an assessment and coordination role at a national level, ensuring the correct information is passed back to the European Commission.

4.1.3 Dŵr Cymru Welsh Water

Dŵr Cymru Welsh Water (DCWW) is the only water and sewerage company in Newport. Under the Act, DCWW are responsible for the operation and maintenance of Newport public sewers and for the management of flood risk arising from the water and sewerage systems. The Act does not make any changes to the operational arrangement for DCWW in respect of managing flood risk.

The Flood and Water Management Act 2010 places a number of statutory duties on Water and sewerage companies including:

- To act consistently with the National Strategy;

- To have regard to the content of the relevant Local Strategy; and
- To co-operate with other Authorities, including sharing data.

Water and sewerage companies often hold valuable information that could greatly aid the understanding of flood risks faced by communities across Wales. Water and sewerage companies will also need to contribute to the preparation of the Local Strategies prepared by LLFAs.

4.1.4 Caldicot and Wentlooge Levels Internal Drainage Board

The Caldicot and Wentlooge Levels Internal Drainage Board (CWLIDB) is an independent statutory body responsible for land drainage in the Gwent levels which is an area of special drainage need. CWLIDB operates predominantly under the Land Drainage Act 1991 and acts as the lead operational authority for ordinary watercourses and for drainage and water level management within both the Caldicot and the Wentlooge levels.

The Flood and Water Management Act 2010 places a number of statutory duties on IDBs including:

- a duty to comply with the National Strategy and the relevant Local Strategy;
- co-operation with other authorities, including sharing data; and
- a duty to contribute to sustainable development.

In addition to these, IDBs have a number of what are called permissive powers. These are powers that allow them to do something but do not compel them to and include:

- powers to designate certain structures or features that affect flood or coastal erosion risk;
- the expansion of powers to undertake works to include broader risk management actions; and
- the ability to cause flooding or coastal erosion under certain conditions.

CWLIDB has a history of collaboration with NCC and will contribute to the preparation of the Local Strategies prepared by the LLFA. CWLIDB has also worked closely with Natural Resources Wales, undertaking works and collaborating in all areas of flood risk management on the Gwent Levels. This relationship has led to the provision of the following services:

- Water Level Management on the Gwent Levels i.e. CWLIDB are responsible for operating all NRW sluices on the Levels
- Undertaking a large annual programme of Capital Works & Sluice Refurbishment on the Gwent Levels

4.2 Assessment of Local Flood Risk

4.2.1 Proposed Methodology

The methodology to identify flood risk and the level of risk in Newport was set out in the Preliminary Flood Risk Assessment (PFRA) [4], which was produced in April 2011. The PFRA included a brief description of the historical flood incidents recorded by NCC, the key stakeholders and the potential future flood risk based on the Flood Map for Surface Water (FMfSW) and Areas Susceptible to Surface Water Flooding (ASTSWF) maps as published by the Natural Resources Wales.

The only indicative Flood Risk Area within Newport City Council shown by Natural Resources Wales Indicative Flood Risk Area map is in the area of Rogerstone which is a cross boundary flood risk area shared with Caerphilly County Borough Council. This area has however been removed from the NCC boundary as part of Preliminary Report as the investigation of relevant data indicated that the present and future flood risks within this area were deemed not to be significant.

The Welsh Government has commissioned NRW to produce flood hazard maps for Wales. These maps are due to be published in June 2013 and Lead Local Flood Authorities across Wales will be encouraged to use them for assessing local flood risk within their administrative boundaries. To ensure that the strategy is consistent with the requirements of the Welsh Government, NCC will use these flood hazard maps as the primary source of data for assessing local flood risk. The Rogerstone area can then be further assessed to confirm its flood risk.

NCC will continue to gather information on flood incidents arising from local sources in Newport. This information will supplement the flood hazard maps. In addition, Strategic Flood Consequences Assessments (SFCAs), flood studies and any hydraulic modelling exercises commissioned by NCC prior to the publication of the flood hazard maps will also be used to inform the assessment of local flood risk.

The assessment of local flood risk will enable the identification of local flood risk areas. These are areas where the consequences of flood risk arising from local sources are considered to have significant harmful impact on human health, economic activity and the environment. The threshold beyond which the consequences will be considered significant will be determined by NCC and will depend upon the population of the area, the presence of critical infrastructure and the environmental sensitivity of the area.

The determination of such thresholds will enable NCC to prioritise efforts in areas considered to be at most risk of local flooding. Such a prioritisation system will ensure transparency and provide immunity from external influences.

4.2.2 Historical Flood Risk

The Newport PFRA provides information on past flooding incidents gathered by different stakeholders. This information is presented in Table 4.1.

Table 4.1 – Dataset of historical flood risk information

Source	Dataset	Description
NCC	Anecdotal information relating to local flood history and flood risk areas	Anecdotal information from authority members regarding areas known to be susceptible to flooding from excessive surface water, groundwater or flooding from ordinary watercourses.
Dŵr Cymru Welsh Water	DG5 register for Dŵr Cymru Welsh Water	DG5 Register logs and records of sewer flooding incidents in each area.
Natural Resources Wales	Recorded Flood Event Outlines (FEOs)	Attributed spatial flood extent data for flooding from all sources
South Wales & Fire Rescue	Historic flooding records	Records of historic flooding events from the Fire Service's call out history records including location, incident type and response given.
Integrated Surface Water Management Group	Sewer flooding hotspots (obtained using data provided by DCWW) and historical surface water flooding incidents	Records of historic flooding events from surface water incidents and sewer flooding, including the number of properties affected and approximate return period of the events

Updated records of flood incidences from DCWW within Newport are highlighted in Figure 2. DCWW indicates around 220 sites which have flooded in the past due to hydraulic overload. These sites include both internal and external flooding and the majority of the locations are properties, although some external locations may be areas such as sections of highway, fields, car parks etc. This source of flood risk is the responsibility of DCWW which continues to be investigated for each sewer flooding site.

Newport PFRA also indicates various historical flooding events that have inundated areas of Newport. These events are summarised in Table 4.2. These historical records will be used to verify the flood hazard maps.

Table 4.2 - Summary of historical flood events within Newport

Location	Date	Number and type of properties affected	Source of flooding
City Centre	9/7/1997	Unknown, likely to be mainly commercial and residential	Surface water, flash flooding. Approx 46mm of rain fell in a 15 minute period
Gaer Vale, Goodrich Crescent	30/10/2000	50-60 residential	Mostly Main River (Crindau Pill), defence exceedance
Ringland Circle	Unknown	Approx. 28 residential	Surface water caused by blocked trash screen
St. Julians	Unknown	16	Surface water from Lotteries Reen overflowing
Duffryn	Unknown	10 (including elderly persons complex)	Tredegar Reen overflowing
Others minor events, including	Rogerstone, Bassaleg, Marshfield, Llanwern	Less than 10	Typically surface water runoff

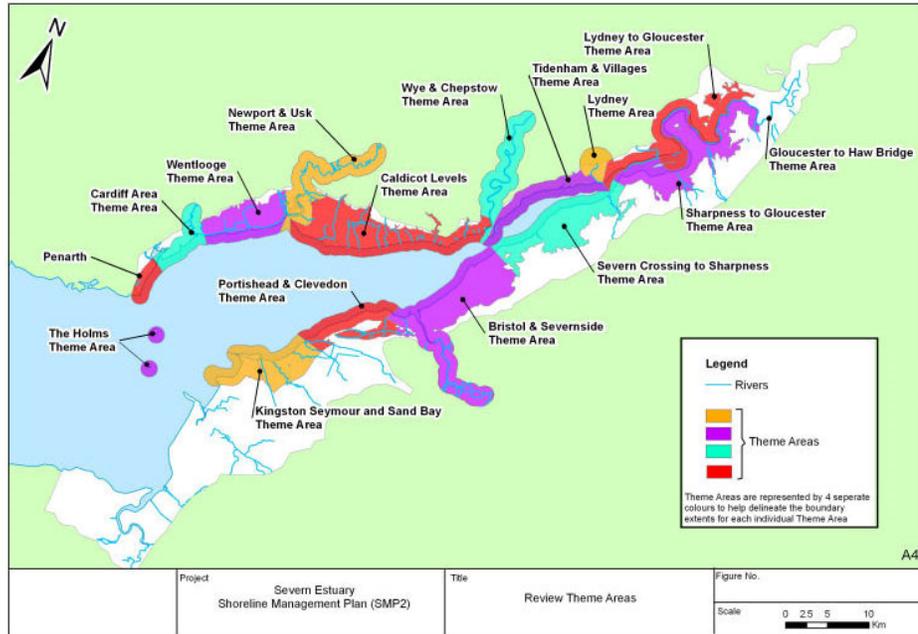
In general, and as stated by NCC, the predominant flood risks throughout Newport are from fluvial and tidal sources. These sources of flood risk are the responsibility of the Natural Resources Wales. The data collected and reviewed in the PFRA also supports the notion that flooding from surface water, groundwater and ordinary watercourses is not significant in Newport.

4.3 Assessing Coastal Erosion Risk

According to the Wales Coastal Monitoring Centre (WCMC), approximately 60% of the population of Wales live on or near the Welsh coastline. The aim of the monitoring centre is to provide information to assist with the management of flood and coastal erosion risk management.

Coastal erosion risk maps are published by the EA and are available to view on their website.

In December 2010, the Severn Estuary Coastal Group (SECG) published the second generation Shoreline Management Plan (SMP2) [5]. The SMP2 contains draft policies proposing how the shoreline around the Severn Estuary should be managed over the next 100 years. The study area of the SMP2 follows the shoreline from Lavernock Point, near Penarth in Wales to Anchor Head, just north of Weston Bay in England), and therefore covering the shoreline in Newport.



The plan identifies policies for managing the shoreline in Newport shoreline which includes the Gwent Levels and the Usk tidal reach.

The SMP2 proposes holding the line, i.e. maintenance of the existing defences, along most of the Newport shoreline. This will minimise any coastal erosion and therefore allow the risk to be managed at an acceptable level. However, for the area on the River Usk from the M4 crossing to Newbridge (both banks) the plan proposes no intervention to allow the coastline to evolve naturally. This is based on the assessment that there are fewer assets at risk in these areas, and therefore the social-economic consequences of coastal erosion are not considered significant. Further details on the policies associated with various areas in Newport can be found in the plan.



Image source: Natural Resources Wales

Management of coastal erosion requires collaborative efforts between the LLFA, the Caldicot and Wentlooge Levels Internal Drainage Board, the NRW, the Welsh Government and the Countryside Council for Wales (CCW). Although the risk of coastal erosion in Newport shoreline is manageable, NCC will continue to engage with various stakeholders to monitor and develop plans for management of coastal erosion risk through the Shoreline Management Plan [5].

The National Strategy [2] states that the Welsh Government is responsible for undertaking a review of national policies in relation to coastal risk management including research on the options for communities facing increasing levels of risk. This review is due to be completed by the end of 2013. The National Strategy also indicates that further legislation relating to flood and coastal erosion risk management will be drafted and will come into force by 2017.

4.4 Objectives and Measures for Delivering the Strategy

4.4.1 Objectives for Managing Local Flood Risk

The *National Strategy for Flood and Erosion Risk Management in Wales* [2] identifies four overarching objectives that must be addressed within Local Strategies. The four overarching objectives are:

1. Reduce the consequences for individuals, communities, businesses and the environment from flooding and coastal erosion;
2. Raise awareness of, and engaging people in the response to, flood and coastal erosion risk;
3. Provide an effective and sustained response to flood and coastal erosion events; and
4. Prioritise investment in the most at risk communities.

Further to this, Welsh Government's *Local Flood Risk Management Strategies* [3] lists the following nine objectives grouped under three sustainability pillars:

Social:

1. Reduce distress (No. of people exposed to flooding).
2. Reduce community disruption (No. of residential and commercial properties).
3. Reduce risk to life (No. of people exposed to depth x velocity of flow).
4. Reduce disruption to critical infrastructure (or maintain operation of)

Economic:

5. Reduce economic damage (e.g. Annual Average Damages (AAD)).
6. Reduce cost of management (note: a risk management outcome for use in appraisal).

Environmental:

7. Reduce damages to Natura 2000 / SSSIs / BAP sites (or improve sites).
8. Improve naturalness (reduce modification of channels / waterbodies).
9. WFD objectives: improve water quality / ecological status (or not deteriorate) – hydromorph and diffuse pollution issues.

Clause 3.3.4 of the guidance document [3] advises that high level strategic objectives should be developed around the reduction of potential adverse consequences of flooding for human health, the environment, cultural heritage, economic activity and, if considered appropriate on local community facilities, non-structural initiatives and/or on the reduction of the likelihood of flooding. By adopting this approach, the objectives will be consistent with those required under the Regulations and will assist in ensuring that this common approach is maintained across Wales.

NCC has set objectives for Newport's strategy by translating the four overarching objectives of the National Strategy into objectives specific to Newport. These objectives are aimed at reducing the consequences of flood risk arising from local sources and coastal erosion risk, and address the short term (0-20 years), the medium term (20-50 years) and the long term (50-100 years) outcomes of the strategy. This ensures that the objectives are also consistent with the requirements of the Regulations. The objectives of the strategy are described in Table 4.3.

As the Risk Management Authorities, the governing bodies and the industry as a whole develop their understanding of local flood risk and coastal erosion, the strategy will also evolve and consequently, the objectives will need to be reviewed.

4.4.2 Measures to Deliver the Objectives

To deliver the objectives mentioned above, the council has identified a series of measures. A measure is defined as an activity, which will be undertaken to manage risk and achieve the agreed objectives.

A wide range of measures have been considered, and range from future land use planning and administration, to maintenance of assets, and emergency response to flood and coastal erosion incidents. In addition, they have been considered for the short, medium and long terms. This will ensure that the strategy is forward thinking and not just reactive to incidents of extreme flooding and coastal erosion.

Through its legislative and guidance framework the Welsh Government has identified seven measures under the high level themes (Prevention, Protection and Preparedness) for LLFAs to consider in preparing their strategies. These measures are:

1. Development planning and adaptation (encompassing both new and adaptations to existing developments/landscapes).
2. Flood forecasting, warning and response.
3. Land, cultural and environmental management.
4. Asset management and maintenance.
5. Studies assessments and plans.
6. High level awareness and engagement (to increase individual and community resilience).
7. Monitoring (of the local flood risk issues).

The proposed objectives and measures are shown in Table 4.3 and will be reviewed by Dŵr Cymru Welsh Water, Natural Resources Wales (post April 2013 Natural Resources Wales) and Caldicot and Wentlooge Levels Internal Drainage Board. To ensure successful delivery of the objectives and the measures, NCC will work in close partnership with these Risk Management Authorities.

Table 4.3 – Proposed Objectives and Measures of the Local Flood Risk Management Strategy

Overarching objectives of the National Strategy for Flood and Coastal Erosion Risk Management in Wales	Objectives of NCC's LFRMS	Proposed High Level Measures	Time scale for implementation
Reducing the consequences for individuals, communities, businesses and the environment from flooding and coastal erosion	1. Provide strategic leadership for assessment and management of flood risk arising from local sources and coastal erosion	1. In accordance with the requirements of the Act, NCC in partnership with other Risk Management Authorities (RMAs) will lead the management of flood risk arising from local sources (i.e. surface water, groundwater and ordinary watercourses), and coastal erosion risk within Newport.	Short term (0-20 years)
	2. Reduce number of people exposed to flooding	2. The EA is due to publish flood hazard maps in 2013. NCC will use these maps to identify areas of significant local flood risk. This will be supplemented with historical flood data held by NCC. Flood risk management strategy and plans will be prepared based on this information.	Short term (0-20 years)
	3. Reduce risk to life (flooding of significant depth and velocity)	3. The National Strategy indicates that the WG will publish coastal erosion maps for Wales by the end of 2012. NCC will use these maps to identify areas at high risk of coastal erosion, and prepare appropriate management strategy and plans.	Short term (0-20 years)
	4. Reduce the number of residential and commercial properties affected by the risk of flooding	4. For proposed developments in sites which have been identified with flood risk, NCC will undertake Strategic Flood Consequences Assessments to consider the effects of flooding elsewhere in the flood area. TAN 15 encourages Local Planning Authorities to prepare a SFCA as part of the LDP evidence base. The aim of the SFCA is to help the Council make informed decisions when considering future development within its area so that, wherever possible, new development will be directed away from areas at high risk of flooding. A SFCA helps determine appropriate development policies and land allocations that do not increase the risk of flooding within the development or the surrounding area, provides an opportunity to reduce the level of flood risk, and helps manage the consequences of flood risk.	Short term (0-20 years)
	5. Reduce disruption to essential services and critical infrastructure		
	6. Minimise damage to environmentally sensitive sites	5. NCC will ensure that the Local Development Plan (LDP) adequately addresses flood and coastal erosion risks including climate change and its effects. This should be undertaken by directing developments away from areas at high risk of flooding or coastal erosion and where the consequences of flooding and/or coastal erosion are deemed unacceptable. The exception to this may be in situations where the information outlined in Development Advice Maps is demonstrated to be incorrect and where feasible and acceptable mitigation measures can be incorporated. The LDP identifies the need to consider the impact of coastal erosion and the creation of habitat and environmental restoration.	Short term (0-20 years)
	7. Develop effective land use and land management policies, and development management procedures		
	8. Prepare an asset maintenance and management plan	6. Where required and when funding becomes available, NCC will undertake catchment based studies with a view to identifying flood risk and design new mitigation measures.	Short, medium and long term (0-100 years)
		7. Whenever possible, NCC in conjunction with the RMAs, will provide advice to supportive landowners on sustainable land use management aiming at improving the risk of flooding. Sustainable land management should consider aspects such as environmental enhancement, habitat restoration and habitat creation, all of which can play a role in alleviating flood risk.	Short, medium and long term (0-100 years)
		8. NCC will establish, and regularly update, a register of all flood risk assets that are likely to influence local flood risk and coastal erosion. This register will contain details of the condition and ownership of these structures and features and will be supplemented with an asset maintenance plan for assets owned by NCC.	Short, medium and long term (0-100 years)
9. The WG is responsible for the Development of National Standards for Sustainable Drainage Systems and accompanying guidance. NCC will adopt this guidance to implement Sustainable Drainage Systems and to execute its role as a SUDS Approval Body (SAB), subject to the implementation of this legislation.		Short, medium and long term (0-100 years)	
	10. NCC will annually monitor the strategy and will review the strategy every 6 years.	Short, medium and long term (0-100 years)	

Overarching objectives of the National Strategy for Flood and Coastal Erosion Risk Management in Wales	Objectives of NCC's LFRMS	Proposed High Level Measures	Time scale for implementation
Raising awareness of and engaging people in the response to flood and coastal erosion risk	<ol style="list-style-type: none"> 1. Ensure that those living in areas susceptible to local flood and coastal erosion risks are aware of it and understand what actions they can take to improve their protection 2. Ensure that NCC works in partnership with all Management Authorities and works collaboratively with adjacent Authorities for successful implementation of the strategy. 	<ol style="list-style-type: none"> 1. NCC, in conjunction with the RMAs, will liaise with local communities and businesses to raise awareness on flood and coastal erosion risks. 2. NCC, in conjunction with the RMAs, will raise awareness on the implementation of property level flood resilience measures. 3. NCC, in conjunction with the RMAs, will encourage participation from willing local communities and businesses in managing local flood risk. 4. NCC, in conjunction with the RMAs, will make appropriate provisions to enable local communities and businesses to find information associated with flood and coastal erosion risks. This will include guidance on how to report a flood incident, important contact details and guidance on preparing flood plans. 5. NCC will continue to form partnerships with the Risk Management Authorities (RMAs) and other relevant stakeholders, such as adjacent Authorities to manage local flood risk. 	<p>Short term (0-20 years)</p> <p>Short term (0-20 years)</p> <p>Short term (0-20 years)</p> <p>Short term (0-20 years)</p> <p>Short, medium and long term (0-100 years)</p>
Providing an effective and sustained response to flood and coastal erosion events	<ol style="list-style-type: none"> 1. Prepare emergency response plans and test their implementation 2. Respond to flood incidents and implement subsequent recovery measures in a timely manner 	<ol style="list-style-type: none"> 1. NCC, in conjunction with the Gwent Local Resilience Forum (LRF), is preparing emergency response plans to deal with flood risk arising from local sources. The identification of suitable respite accommodation, evacuation protocol and sources of mutual aid are already in place. 2. NCC, in conjunction with the LRF, and the RMAs as appropriate, will assist local communities, businesses and individuals with the preparation of emergency plans. 3. NCC, in conjunction with the LRF, will continue to undertake exercises to test the implementation of their emergency plans, and their response and recovery mechanism to flooding incidents. 4. Where necessary, NCC will endeavour to undertake investigations into flood incidents within four weeks. 	<p>Short term (0-20 years)</p> <p>Short term (0-20 years)</p> <p>Short term (0-20 years)</p> <p>Short, medium and long term (0-100 years)</p>
Prioritising investment in the most at risk communities	<ol style="list-style-type: none"> 1. Prepare a programme of investment for flood and coastal erosion risk management based on a cost benefit analysis for communities at risk 	<ol style="list-style-type: none"> 1. NCC will identify communities that are at most risk of flooding from local sources or from coastal erosion, consider the cost and benefits of identified schemes that manage or reduce the risk of flooding from these sources, and prepare and implement a prioritisation system for specific projects. NCC will also prepare a business case for securing funding for these projects. 2. NCC will annually review their current maintenance regime and consider targeted maintenance changes to manage or reduce local flood and coastal erosion risk. 	<p>Short term (0-20 years)</p> <p>Short, medium and long term (0-100 years)</p>

4.5 Funding for Local Flood Risk Management

4.5.1 Cost and Benefit Analysis

For each of the measures identified above, the benefits (be they tangible or intangible), the associated costs and the means by which the measures will be funded will need to be determined. These details cannot be incorporated within the Local Strategy as yet, as no specific measures for implementation at particular locations have been identified at this stage. In the same way, details for measures that are not locational specific such as implementation of awareness campaigns and the provision of guidance and advice to local communities, business and individuals will need to be clearly defined before undertaking a cost/benefit analysis. The individual specific measures will be identified during the preparation of the Flood Risk Management Plans which will be completed by June 2015.

Before the detailed measures can be specified it will be necessary to complete the process outlined below as required by the Regulations:

1. Prepare Flood Hazard Plans (to be completed by 22nd June 2013).
2. Prepare Flood Risk Plans (to be completed by 22nd June 2013).
3. Prepare Flood Risk Management Plans (to be completed by 22nd June 2015).

In addition the following procedures will need to be undertaken to identify the measures to be implemented at specific locations:

4. Modelling of individual areas identified as high risk.
5. Prioritisation of areas based on magnitude of flood risk.
6. Design of measures to be implemented.

A cost/benefit analysis is ultimately dependant on the strategic priorities and the means of funding and therefore the Strategy addresses these issues together wherever possible. For each measure identified it is important to establish which organisations/stake holders are funding the measures and which organisations/stake holders are benefiting from the proposed measures. This will form an important element the cost/benefit analysis process.

In accordance with the Welsh Government guidance [3], NCC will use the Project Appraisal Guidance series published by DEFRA for undertaking economic assessments of specific measures when these are identified during subsequent stages of the process. Where cost-benefit analysis is required, then this will be undertaken in accordance with the guidance contained in the Flood and Coastal Defence Project Appraisal Guidance FCDPAG3 Economic Appraisal document.

The National Strategy [2] states that the Welsh Government is in the process of undertaking research into the cost and benefits of softer engineering approaches including the use of natural processes to flood and coastal erosion risk management. The findings of this research are due to be published in 2013, and will be reviewed by NCC to inform the cost and benefit analysis of specific measures which will be identified during subsequent stages of the development of the strategy.

4.5.2 Potential Sources of Funding

Funding for implementing the measures proposed under the strategy can be sourced locally, nationally or via the European Union. Some of the potential avenues from where funding could be sourced are noted below.

- Funding from Welsh Government
- Local Authority's existing prudential borrowings
- Capital funding sourced from the Flood and Coastal Resilience Partnership Funding or Flood Defence Grant in Aid (FDGiA)
- Department for Communities and Local Government (DCLG) Local Services Support Grant (LSSG) which originates from DEFRA.
- Increase in council tax precepts and/or local business rates
- Alternative sources such as Section 106 (S106) agreements, local tariffs, Community Infrastructure Levy (CIL)
- Private and/or community beneficiary contributions
- European Union funding available via the European Regional Development Fund (ERDF)

These sources could provide either partial funding, match funding or full funding. The source from where the funding can be provided will depend upon the nature of the scheme.

The Welsh Government is currently developing a national funding policy which is due to be published in 2013. It is understood that this funding policy will aim to prioritise the applications received by the Welsh Government for the financing of flood and coastal erosion risk management activities.

The National Strategy states that the Welsh Government is in the process of developing a business case for the establishment of a single capital funding programme for the implementation of flood and coastal erosion risk management in Wales. This exercise is due to be completed in 2014 and could result in the establishment of a central funding pot available to Lead Local Flood Authorities for implementing their strategies.

To access national funding made available by the Welsh Government, it will be necessary to demonstrate that the measures for which funding is required are consistent with the National Strategy, and the objectives of the National Strategy can be met by implementing those measures. In addition, these measures will need to meet any prioritisation criteria set out by the Welsh Government to obtain national funding.

If the measures do not meet the objectives of the National Strategy, then NCC will consider financing those measures via local funding. Such funding can be provided by utilising the Authority's existing prudential borrowing.

In the current economic climate, it is imperative to explore alternative funding sources. The Community Infrastructure Levy (Amendment) Regulations 2012 came into force on 6 April 2012. Under these regulations, local authorities in England and Wales can choose to impose a levy on new developments within

their administrative areas. The purpose of the levy is to fund infrastructure and development that is thought necessary by the local authority and the local community. The Welsh Government is due to publish a national policy on the use of contributions towards flood and coastal erosion risk management schemes in Wales.

Funding can also be sourced from the ERDF. If it can be demonstrated that the proposed measures meet the requirements of the ERDF, then match funding can be accessed via the Interreg IV programme, an initiative that aims to stimulate cooperation between regions in the European Union and ends in 2013.

NCC will explore all possible sources from where funding can be secured for implementing the measures proposed under the strategy.

NCC will also liaise with Natural Resources Wales and Dŵr Cymru to identify what, if any, flood risk management schemes are being implemented by these Risk Management Authorities, and whether there is an opportunity to work jointly and share the costs associated with any of the proposed measures.

4.6 Strategy Review

The National Strategy will be formally reviewed on a six-yearly cycle, mirroring the requirements of the Flood Risk Regulations 2009. This will enable the Welsh Government to consider the information being produced from the mapping and planning exercises that the Natural Resources Wales and LLFA will complete.

This information will also continue to inform the development of Local Strategies and so it seems logical for the Local Strategies to reflect this six yearly review cycle. However, Local Strategies should be subject to continuous improvement and not completed as one off exercises. Regular reviews should be built in to allow an alternative approach to be adopted with all of the relevant data being taken into consideration.

NCC have therefore decided that a review of this strategy will take place every 6 years, the first being in 2017 to coincide with the formal review of the National FCERM Strategy.

4.7 Contribution to the Wider Environmental Objectives

The contribution of the strategy towards wider environmental objectives is largely dictated by the following three legislations:

1. Water Framework Directive (WFD);
2. Strategic Environmental Assessment (SEA) Directive; and
3. Habitats Directive

4.7.1 Water Framework Directive

The Water Framework Directive came into force on 22 December 2000 and was introduced by the European Commission (EC). Under the directive, member states are required to improve the management of water bodies with the aim of achieving improved chemical and ecological status in inland and coastal waters by 2015. The requirements of this directive are implemented in the UK via the Water Environment Regulations 2003. In addition to improving water quality, the regulation also promotes sustainable use of water as a natural resource, and encourages relevant authorities to conserve habitats and species that dependant directly on water.

To meet the requirements of the Directive, NRW have produced a management plan for each of the three River Basin Districts in Wales. The River Basin Management Plan for the Severn River Basin District is applicable to the administrative boundary of NCC. This management plan outlines the measures that NRW are likely to implement to meet the requirements of the Directive.

Specific measures, particularly structural measures, associated with managing local flood risk and coastal erosion will have to comply with the requirements of the Directive. As part of the on-going liaison between NCC and Natural Resources Wales, once specific measures are designed, these will be communicated to NRW for advice. In this way, NCC will consider how the

strategy could assist, and benefit from, the delivery of the Water Framework Directive objectives.

4.7.2 Strategic Environmental Assessment Directive

The Strategic Environmental Assessment Directive was introduced by the EC in 2001. The requirements of Directive are implemented in Wales by the Environmental Assessment of Plans and Programmes Regulations 2004 which came into force in July 2004. The directive is aimed at providing high level protection to the environment and encourages the integration of environmental considerations into the relevant plans and programmes.

The Welsh Government has determined that the National Strategy requires a Strategic Environmental Assessment (SEA) to be undertaken. Given the nature, content and legal requirement to produce Local Strategies, an SEA is also required for the LFRMS.

The SEA needs to be proportionate to the level of detail contained within the strategy. Since the strategy is a high level document, the supporting assessment has also been prepared at a strategic level and a SEA Scoping Report has been prepared. This scoping report sets out the framework for undertaking further assessments as and when specific measures – and the strategy itself – are developed further during subsequent stages. In accordance with the statutory requirements, this Scoping Report has been reviewed by Natural Resources Wales.

Following on from the Scoping Report, NCC commissioned the preparation of an SEA Report.

The SEA methodology was based on the following:

- Identifying environmental protection objectives set out elsewhere in policy or legislation;
- Identifying the current environmental character of the area and how it may change in the future; and using these to
- Distilling the key environmental issues in the area that the Local Strategy will interact with; and
- Developing a set of SEA objectives in a framework, against which the Local Strategy is assessed against.

The SEA concentrated on assessing the potential for effects arising from the Local Strategy objectives and the range of potential measures under consideration.

The conclusions of the SEA of the Local Strategy are generally positive. Aligning with the National Strategy and relevant guidance, there has been a clear consideration to integrate environmental issues and opportunities into the objectives of the Local Strategy. Many of the proposed measures have the potential for direct and indirect environmental benefits. However, the SEA makes a number of recommendations to avoid, reduce or otherwise mitigate the potential for negative effects, and ensure the potential for positive opportunities are considered.

The recommendations are that the Local Strategy should:

- Consider flood risk management options that work with natural processes and provide multiple benefit, for example by working in synergy with the Water Framework Directive or environmental enhancement initiatives;
- Be clear that the processes for developing the next stages of flood risk and coastal erosion planning, appraisals, implementation and construction of measures will address the potential for environmental effects;
- Use the results of the SEA as an initial guide to the above processes.

NCC should consider the potential for the Flood Risk Management Plans to be a 'plan or programme' requiring SEA under the 'SEA' Regulations.

The 'SEA' Regulations require NCC to monitor the significant environmental effects of the implementation of the plan – with the aim of identifying unforeseen adverse effects at an early stage and to allow appropriate remedial action to be taken. In this context, the SEA outlines the monitoring proposals for the Local Strategy as show on Table 4.4, aligning these where possible with the monitoring required for the Local Development Plan.

Table 4.4 - Monitoring proposals for the Newport Local Strategy

No.	SEA objective	Proposed Indicator	Information Sources	Update/Frequency
1	Address and reduce flood risk now and in the future NB - SEA objective delivery is the core purpose of the Local Strategy. Indicators to be developed by the Local Strategy.	Amount of development within C1 and C2 flood zones as defined by TAN 15.	Natural Resources Wales NCC Development Management LDP Monitoring (once adopted)	Annual
		Percentage of new developments with Sustainable Drainage Systems (SuDS)	NCC LDP Monitoring (once adopted)	Annual
		Number of properties at risk of flooding from surface water, groundwater and ordinary watercourses	Local Strategy Risk Partners	Annual
		Number of flood incidents from surface water, groundwater and ordinary watercourses	Local Strategy Risk Partners	Annual
		Amount of Essential Infrastructure within C1 and C2 flood zones as defined by TAN15	NCC LDP Monitoring (once adopted)	Annual

No.	SEA objective	Proposed Indicator	Information Sources	Update/ Frequency
2	Improve health and wellbeing of local people	Proportion of the populations living in wards that rank amongst the 100 most deprived in Wales	Wales Index of Multiple Deprivation	3 years (next update 2014)
		Number of properties at risk of flooding from surface water, groundwater and ordinary watercourses	Local Strategy Risk Partners	Annual
		Number of households within 400m of parks/open space	NCC LDP Monitoring (once adopted)	Annual
		Number of Critical Support Services (hospitals, care homes, etc.) within C1 and C2 flood zones	NCC LDP Monitoring (once adopted)	Annual
3	Protect recognised biodiversity/geodiversity features and enhance the diversity, extent and distribution of habitats and species	Total area affected by non-native invasive species	NCC	5 years
		Area of successfully eradicated non-native species	NCC LDP Monitoring (once adopted)	Annual
		Areas of habitat lost/gained/enhanced through Local Strategy implementation	Local Strategy NCC	3 years
		Changes in populations of selected local characteristic species in the LBAP	NCC LDP Monitoring (once adopted)	Annual
		Length of linear habitats created/ maintained or enhanced, which increase the connectivity of biodiversity habitats	NCC LDP Monitoring (once adopted)	Annual
4	Protect and enhance the water environment	WFD waterbodies - no deterioration in WFD status	Natural Resources Wales	6 years
		Number of projects that: - create/enhance naturalness of channels/waterbodies - incorporate water quality improvement measures	Local Strategy NCC	3 years

No.	SEA objective	Proposed Indicator	Information Sources	Update/Frequency
5	Safeguard and enhance the historic environment	Proportion of historic environment assets (Scheduled Monuments, Listed Buildings, Conservation Areas) at risk of flooding	Local Strategy NCC	3 years
		Number of historic environment assets adversely affected by Local Strategy implementation	Local Strategy NCC	3 years
		Number of projects affecting/enhancing Historic landscapes/Registered Parks and Gardens	Local Strategy NCC	3 years
6	Help to minimise the cause and effects of climate change	Number of projects incorporating consideration of carbon emissions and adaptation measures	Local Strategy NCC	3 Years
7	Protect and enhance the countryside and landscape character	Number of projects affecting/enhancing nationally/locally important landscapes	Local Strategy NCC	3 years
8	Promote sustainable and effective use of land and soils	Percentage of contaminated land remediated	NCC LDP Monitoring (once adopted)	Annual
		Number of developments with Soil Management Plans in place	NCC LDP Monitoring (once adopted)	Annual

4.7.3 Habitats Directive

The Habitats Directive was introduced by the EC in 1992. Implemented in conjunction with the Birds Directive, the purpose of the Habitats Directive is to offer protection to natural habitat and wild flora and fauna. The adoption of the directive led to the creation of protected sites across Europe.

The requirements of the Habitats Directive are implemented in Wales by the Conservation of Habitats and Species Regulations 2010, often referred to as the Habitats Regulations. The sites that are afforded protection under this regulation are referred to as Special Areas of Conservation (SAC) and Special Protection Areas (SPA) in the UK. As a matter of policy, the Welsh Government and the UK Government have also chosen to apply the same level of protection to Ramsar sites. Under the regulations, competent authorities are required to undertake appropriate assessments where a plan or a project is likely to have an impact on a protected (SAC, SPA and Ramsar) site. Such assessment is referred to as a Habitats Regulations Assessment (HRA).

The National Strategy is subject to a Habitats Regulations Assessment. Specific measures due to be identified during subsequent stages of the development of the LFRMS may also be subject to a Habitats Regulations Assessment. The need for such an assessment will depend upon the type of measure proposed to be implemented. For instance, a non-structural measure which involves raising flood risk awareness by holding community engagement exercises will not be subject to this assessment. However, a structural measure which involves constructing a flood alleviation scheme will be subject to this assessment. The assessment, if required, will be undertaken in the following four stages.

Stage 1 – Screening

The screening stage assesses the likely impact of the project, either alone or in combination with other plans and projects, on a protected site. The screening process also assesses the significance of the likely impacts.

Stage 2 – Appropriate Assessment

This stage considers the impact of the proposed project on the integrity of the protected site in relation to its conservation objectives and its functions. If any adverse impact is identified, then mitigation measures need to be considered. If the mitigation measures cannot avoid the adverse impact on the protected site, then consent for the project can only be granted provided that Stages 3 and 4 are followed.

Stage 3 – Assessment of Alternative Solutions

This stage determines if it is possible to achieve the objectives of the proposed project by considering alternative solutions which will have lesser impact on the protected site.

Stage 4 – Imperative Reasons for Over-riding Public Interest (IROPI)

If the adverse impacts associated with the proposed project cannot be mitigated, then a Stage 4 assessment is undertaken. If this assessment concludes that the proposed project should proceed, then compensatory measures, which maintain the overall coherence of the site, will need to be secured. The national government will need to be consulted prior to the implementation of the project. In addition, the Secretary of State for Communities and the local government will need to inform the EC about the compensatory measures secured as part of the process.

If the Habitats Regulation Assessment concludes that a certain specific measure will impact on a protected site, then in addition to a full Habitats Assessment, an Environmental Assessment will also be undertaken.

Given that the strategy is required to demonstrate wider environmental benefits, measures that have significant adverse environmental impacts are unlikely to be viewed positively by the public, the Risk Management Authorities and the Welsh Government who will need to approve the strategy. However, if a particular measure demonstrates greater benefits for the local community and local businesses, then it may be possible to justify the adverse environmental impact.

5 Way Forward

The National Strategy [2] requires the Authorities to have completed proportionate implementation of the measures specified in the strategy by 2017.

The programme for delivering the management of local flood risk and coastal erosion will be dictated by the specific measures required for undertaking such management. However, the specific measures can only be developed after the flood hazard maps are published, allowing a detailed assessment of flood risk to be undertaken. These maps are due to be published in June 2013. As a result, a detailed programme for delivering the strategy cannot be developed at this stage.

Regardless of the detailed programme of implementation of the specific measures which will be developed in the future, NCC will monitor the strategy on an annual basis and review the strategy every six years.

6 Conclusions

Newport City Council, in their role as a Lead Local Flood Authority, has commissioned the preparation of this Local Flood Risk Management Strategy for Newport. This high level strategy document has been drafted in accordance with the requirements of the Act.

In addition to NCC, Natural Resources Wales, Dŵr Cymru Welsh Water and Caldicot and Wentlooge Levels Internal Drainage Board have been identified as the Risk Management Authorities in Newport. All four authorities will work in close collaboration to ensure the management of local flood risk and coastal erosion.

The strategy is only required to address flood risk arising from surface water, groundwater and ordinary watercourses. Addressing sewer flood risk as part of the strategy is not a requirement under the Act, as this responsibility rests with the sewer operator. However, where flood risk arising from such sources has an impact on the local communities and business within Newport, NCC will work jointly with Dŵr Cymru Welsh Water to address the risk.

The responsibility for addressing flood risk arising from main rivers and the sea within Newport rests with Natural Resources Wales, and is therefore not addressed as part of this report. However, in the same manner, where flood risk arising from such sources has an impact on the local communities and business within Newport, NCC will work jointly with the agency to address the risk.

NCC undertook an initial public consultation during November and December 2012. The purpose of the consultation was to understand the views of the residents, businesses and other organisations in Newport on local flood risk, and help shape the strategy. Following the initial public consultation, a draft of the Local Strategy was prepared and was subjected to a public consultation during January and February 2013. In addition, the Welsh Government, Natural Resources Wales, the Caldicot and Wentlooge Levels IDB and DCWW were also invited to provide feedback and comment on the draft. The responses received from the public and the statutory bodies have been incorporated within this Local Strategy.

To enable effective management, it is imperative to gain a reasonable understanding of flood risk. This requires undertaking an assessment of flood risk with a view to identifying those areas that are considered to be at most risk. It is understood that the Welsh Government has commissioned the preparation of flood hazard maps for Wales, and these maps are due to be published in June 2013. These maps will form the basis of assessing flood risk and identifying areas that require the management of flood risk. Following their publication, NCC will review these maps alongside the historical flooding information currently held by NCC and identify areas where management of local flood risk needs prioritising within Newport.

The specific measures required for the management of local flood risk cannot be identified until the assessment of flood risk – and identification of flood risk areas – is completed. However, NCC has compiled a set of high levels objectives for the strategy and the measures required to achieve those objectives. These objectives

and measure aim to reduce the social, economic and environmental consequences of flooding, and include short, medium and long term targets.

NCC will consider funding of the strategy and the specific measures from a variety of sources ranging from European funding to CIL and funding raised from S106 agreements. Where necessary, cost and benefit analysis will be undertaken of the specific measures required to manage local flood risk and coastal erosion risk to ensure the economic viability of such measures.

References

- [1] *Climate Change Risk Assessment, Wales* (January 2012), Department for Environment, Food and Rural Affairs (DEFRA) and Welsh Government
- [2] *National Strategy for Flood and Coastal Erosion Risk Management in Wales* (November 2011), Welsh Government
- [3] *Local Flood Risk Management Strategies, Local Strategy* (November 2011), Welsh Government
- [4] *Preliminary Assessment Report, Preliminary Flood Risk Assessment* (April 2011), Newport City Council
- [5] *Severn Estuary Shoreline Management Plan (SMP2)* (December 2010), Severn Estuary Coastal Group

Figures

Figure 1 Administrative Boundary of Newport

Figure 2 Newport Historical Flood Risk