

Appendix 3



# Cyngor Gwynedd

## Local Flood Risk Management Strategy - Summary

DRAFT



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## 1. Introduction

The *Flood and Water Management Act 2010*<sup>1</sup> requires all 22 Lead Local Flood Authorities (LLFAs) in Wales to produce a Local Flood Risk Management Strategies (Local Strategy).

Different Risk Management Authorities (RMAs) in Wales are responsible for different sources of flood risk. LLFAs are responsible for “local flood risk” which is defined as flood risk from:

- Surface water runoff
- Groundwater; and
- Ordinary watercourses (generally smaller watercourses)

This Local Strategy focuses on these local sources of flood risk but acknowledges and considers other sources of flood risk (including the sea, larger watercourses and sewers) as well as coast erosion.

In this document we identify the present day and future risks associated with flooding and coastal erosion. Our aim is to make the reader aware of all sources of flooding within their community, rather than focus only on the sources for which Cyngor Gwynedd act as RMA.

We also explain how these risks will be managed across our Local Authority area, consistent with the objectives, measures and related policies and legislation set out in the National Strategy.

This document considers inland and coastal risks separately, this is because there is often little correlation between the nature of the risks and the ability to mitigate them. Furthermore, in order to segregate the risk across Gwynedd and help identify the areas of most concern we shall discuss inland flood risk by main hydrological catchments, of which there are 15 in total. Coastal risks are assessed and discussed according to specific lengths of the coastline termed as Management Areas (see section xxx).

This Local Strategy published on XXX will be reviewed in X years.

## 2. How this strategy responds to climate change

The Senedd was the first Parliament in the world to declare a climate emergency. Climate change is likely to increase the risk of flooding across Wales, not only through sea level rise but also from more frequent and intense storms, flash flooding and storm surges.

In March 2019 Cyngor Gwynedd declared its own climate emergency and vowed to take definitive steps to reduce carbon emissions and to work towards a carbon-free future. Subsequently the Council have published a *Climate and Nature Emergency Plan*<sup>2</sup>, which outlines the steps that we will take between 2022 and 2030 to reach our ambition of being a net zero council.

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<sup>1</sup> <https://www.legislation.gov.uk/ukpga/2010/29/contents>

<sup>2</sup> <https://www.gwynedd.llyw.cymru/en/Residents/Climate-and-Nature.aspx>

The level of flood risk to property across Gwynedd is expected to rise significantly in the future due to the effects of climate change, with an increase in frequency and depth of flooding to coastal and low-lying areas. Within Gwynedd we anticipate that an additional 2127 residential properties will be at risk of coastal flooding over the next 100 years (up 50% from 4228 at present day), and additional 1826 residential properties face risk of fluvial or surface water flooding over this time period (up 35% from 5258 at present day). This in addition to an increase in the level of flood risk for properties currently located within flood zones.




This Local Strategy has been developed to continually assess and manage flood and coastal erosion risks across Gwynedd into the future and will address the increase in risks due to the effects of climate change as part of this process. Key steps are taken to embed future climate change effects into the objectives and actions of this Local Strategy.




### 3. Sources of flooding and key points of contact

The term ‘flood and coastal erosion risk’ covers all flooding from rivers, the sea, reservoirs, ordinary watercourses, groundwater and surface water, as well as coastal erosion. Figure 1 below summarises the different types of risks and the key points of contact in each case.

Cyngor Gwynedd are committed to working in partnership with RMAs, other stakeholders and local communities to achieve the flood risk objectives and actions in this Local Strategy.

Figure 1: Types of risks & who you should contact

|   |  |
|---|--|
|  | <p><b>River flooding (fluvial)</b> tends to follow sustained rainfall resulting in high river levels and river banks being breached, or defences overtopped. It can also be caused by blockages where the river or stream flows within or beneath a structure such as a bridge or culvert.</p> <p>Contact <b>CG</b> as <b>LLFA</b> for flooding associated with <b>Ordinary Watercourses</b></p> <p>Contact <b>NRW</b> for flooding associated with <b>Main Rivers</b></p>               |
|  | <p><b>Surface water flooding (pluvial)</b> happens when rainfall saturates the ground and drainage systems and excess water cannot drain away. Whilst more common in urban areas, it also affects rural communities, hitting transport, agriculture and the local economy. It can occur at any time of year: whilst winter sees more rain coming from Atlantic weather systems, the summer months bring an increased risk of flash flooding.</p> <p>Contact <b>CG</b> as <b>LLFA</b></p> |
|  | <p><b>Coastal flooding</b> usually occurs when high tides combine with severe weather resulting in coastal or estuarine communities being flooded. A combination of significantly high tides, high on-shore winds and low atmospheric pressure can result in increase in tide level known as storm surge.</p> <p>Contact <b>NRW</b></p>  |

|   |  |
|---|--|
|  | <p><b>Coastal erosion</b> is defined as the wearing away of land by wave action, tidal currents, wave currents, drainage, weathering or high winds.</p> <p>Contact <b>CG</b> or <b>NRW</b> as <b>Coastal Protection Authorities</b></p>  |
|  | <p><b>Sewer flooding</b> is often caused by excess surface water entering the drainage network and exceeding the capacity of the sewer or failure of a sewer due to collapse or debris build up. During sewer flooding both foul and surface water can occur.</p> <p>Contact <b>DCWW</b> as the <b>Water and Sewerage Undertaker</b></p> |
|  | <p><b>Flooding from Roads</b> occurs when the volume of rainwater does not drain away through existing drainage systems.</p> <p>Contact the <b>North and Mid Wales Trunk Road Agency</b> for flooding from <b>trunk roads</b>.</p> <p>Contact <b>CG</b> as the <b>Highway Authority</b> for flooding from other roads</p>                |

Cyngor Gwynedd as LLFA are responsible for managing flood risk from surface water and ground water, or from ordinary watercourses. LLFAs have the following duties under the *Flood and Water Management Act 2010*:

- Prepare and maintain a Local Flood Risk Management Strategy for their areas, coordinating views and activity with other local bodies and communities through public consultation and scrutiny, and delivery planning. They must consult RMAs and the public about their strategy;
- Investigate significant local flooding incidents and publish the results of such investigations;
- Maintain a register of structures and features likely to affect flood risk
- Co-operate with other RMAs.
- Under Schedule 3 to the 2010 Act, Cyngor Gwynedd as the SuDS Approving Body<sup>3</sup> (the SAB) have a duty to approve SuDS (Sustainable Drainage Systems) which follow the national statutory standards. With the exception of single-curtilage sites, the SAB also has a duty to adopt such systems.

Cyngor Gwynedd as LLFA has powers under the *Land Drainage Act 1991*<sup>4</sup>, which allow them to:

- Manage flood risk from ordinary watercourses.
- Manage flood risk from surface water or groundwater.
- Monitor, maintain, operate or repair works to manage flood risk from sea.
- All such works must be in accordance with this Local Flood Risk Management Strategy.

Coastal Local Authorities such as Cyngor Gwynedd are also designated as a Coastal Erosion RMA under the *Coast Protection Act 1949*, which gives them powers to protect the land

<sup>3</sup> <https://www.gwynedd.llyw.cymru/en/Residents/Planning-and-building-control/Planning/Sustainable-Drainage-Systems.aspx>

<sup>4</sup> <https://www.legislation.gov.uk/ukpga/1991/59/contents>

against erosion or encroachment by the sea. Cyngor Gwynedd are responsible for maintaining a total of 229 coastal erosion assets across 21km of the coastline, many of which are historic structure situated along our promenades and harbours, and some of which also provide a level of protection from coastal flooding.

Cyngor Gwynedd have other important responsibilities relating to flood risk management:

- Cyngor Gwynedd are responsible for drainage of local highways under the *Highways Act, s100*<sup>5</sup>, whilst the Welsh Government has a responsibility for trunk road drainage.
- Under the *Civil Contingencies Act 2004*<sup>6</sup>, Cyngor Gwynedd are Category 1 responders giving them duties to:
  - maintain arrangements to warn the public, and to provide information and advice to the public, if an emergency is likely to occur or has occurred
  - play a lead role in emergency planning and recovery after a flood event and must have plans to respond to emergencies,
- Cyngor Gwynedd (along with Snowdonia National Park Authority) act as local planning authority and in doing so must have regard to potential risks associated with flooding and coastal erosion when developing local policies and determining applications for development. Specialist advice is provided by NRW and the Water and Environment Unit within YGC.

#### 4. How we manage flooding in our area

Cyngor Gwynedd manage the risk of flooding within its communities through a range of different methods, these are described in Table 2 below under the headings of Maintain, Plan, Respond, Regulate, Monitor and Inform.

Table 2: Methods adopted by Cyngor Gwynedd to manage risk of flooding and coastal erosion

|   |
|---|
| <b>Maintain</b>   |
| Cyngor Gwynedd are responsible for a variety of flood and coastal erosion risk management (FCERM) structures such as flood walls and overflow systems on rivers, and coastal walls and groyne fields.   |
| The condition of the Council’s FCERM assets is assessed on a regular basis using industry standard techniques, for assurance that they remain in adequate condition to provide the desired standard of defence, and to identify any defects which could compromise integrity in the future. Routine inspections are supplemented by post-storm condition inspections.   |
| Responsibility for all bridges and culverts on the local highway network which are inspected on a regular basis to ensure that they remain functional and do not pose a flood risk. The Council also maintain all highway gully’s and drains on a cyclic programme and will undertake repairs or improvements as and when condition dictates in accordance with the Council’s Highway Maintenance manual <sup>7</sup> . |
| <b>Plan</b>   |
| Cyngor Gwynedd deliver FCERM improvement schemes to minimise the risk of local flooding or coastal erosion to our most vulnerable communities. Capital support for schemes of this kind is offered through the Welsh Government’s FCERM Programme).   |

<sup>5</sup> <https://www.legislation.gov.uk/ukpga/1980/66/data.pdf>

<sup>6</sup> <https://www.legislation.gov.uk/ukpga/2004/36/contents>

<sup>7</sup> Angan ref i Highways Maintenance Manual



By acknowledging that not all households can be protected from flooding through capital improvement schemes the Council also offer advice to concerned residents on measures that can be taken to reduce flood risk to their properties.

### **Respond**

During a flood event Cyngor Gwynedd will take all reasonable measures to ensure that their network of county roads remain passable for vehicles.

During severe rainfall events the Council will make every effort to distribute sandbags to residents that are at serious risk of flooding, although **residents are strongly advised to source their own flood risk management equipment when a known flood risk exists** as the ability of the Council to share sandbags could be severely compromised during periods of adverse weather when the priority is to keep the highway network open for emergency services.

Under the guidance of the North Wales Resilience Forum, and the measures included in the Multi-Agency Flood Plan, the Council will take appropriate action to support the emergency services and those engaged in emergency response.

On becoming aware that a property has experienced internal flooding following severe rainfall or tidal events Cyngor Gwynedd undertake investigations to determine source and cause of flooding.

### **Regulate**

Cyngor Gwynedd (along with Snowdonia National Park Authority) act as local planning authority and in doing so must have regard to potential risks associated with flooding and coastal erosion when developing local policies and determining applications for development.

Cyngor Gwynedd as the SAB have a duty to approve SuDS (Sustainable Drainage Systems) which follow the national statutory standards.

Under section 23 of the Land Drainage Act Cyngor Gwynedd are responsible for authorising consent to individuals, developers or authorities who wish to carry out changes to an ordinary watercourse that may affect flow or flood risk.

Where Cyngor Gwynedd have been made aware of a potential blockage or obstruction to an ordinary watercourse we will work with all parties involved to help resolve the problem before considering the use of permissive enforcement powers afforded under the Land Drainage Act.

### **Monitor**

Cyngor Gwynedd monitor beach levels at critical locations along the coastline as part of the national programme to identify any fluctuations in beach levels that may pose immediate risks to coastal assets and subsequently our communities.

## **5. How we assess flood and coastal erosion risk**

Our flood risk assessment provides information regarding the number of residential properties, non-residential properties and essential services considered to be at risk from flooding in Gwynedd. Not all properties or receptors identified as being at risk will have experienced flooding in the past, however they are located within a specific band of flood risk according to the national-scale flood modelling exercises described below.

As discuss above flooding can occur from several sources and different authorities are assigned as RMA according to the source of the risk. For the purpose of this Local Strategy, we highlight the risk of flooding from all natural sources (i.e. excluding sewer, reservoir) regardless of leading RMA. Some receptors may well be susceptible to flooding from more than one source, but this can complicate explanations and data presentation, so flood risk sources have been divided into two broad categories:

- inland (watercourses and surface water)
- coastal

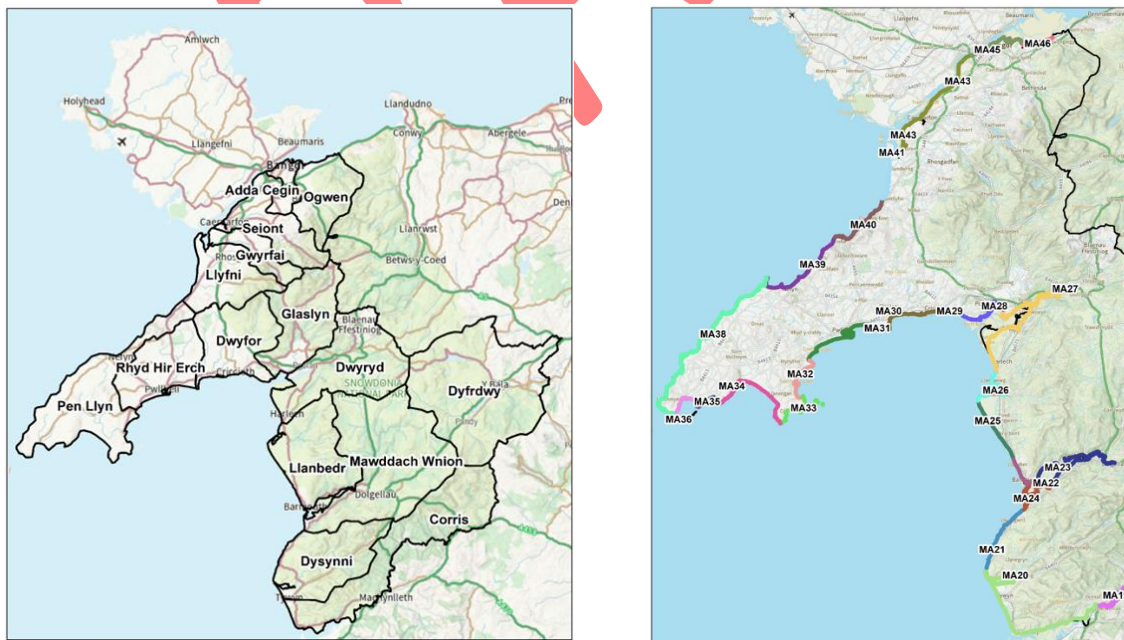
To identify areas and receptors at risk of flooding we have used information obtained from the national flood maps developed by NRW. The level of flood risk to any area, and subsequently to any receptor, is described as the likelihood or ‘chance’ of flooding in any year as displayed in table 3 below.

Table 3: Flood risk categories used in our assessment

| Level of flood risk   | Likelihood of flooding  |
|-----------------------|---|
| <b>High</b>           | This area has a chance of flooding greater than 1 in 30 in any given year (annual probability of flooding 3.3%) |
| <b>Medium</b>         | This area has a chance of flooding between 1 in 100 (1%) and 1 in 30 (3.3%) in any given year                   |
| <b>Low</b>            | This area has a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%) in any given year                 |
| <b>Climate Change</b> | Expected to be at risk of flooding due to climate change effects (mainly sea level rise)                        |

To segregate the risk across Gwynedd and help identify the areas of most concern we discuss inland flood risk by main hydrological catchments, of which there are 15 in total. Coastal risk is described according to coastal Management Areas that have been defined within the Shoreline Management Plan (SMP2).

Figure 1: Hydrological catchments and coastal Management Areas within Gwynedd





## 6. Overview of flood risk in Gwynedd

Table 4 summarises the number of residential properties within various inland flood risk zones across Gwynedd.

Table 4: Summary of properties at risk of inland flooding across Gwynedd

| <i>Number of properties at flood risk</i> |                  |                    |                 |                      | <i>Number of Essential Services / Non-residential properties at flood risk</i> |
|---|------------------|--------------------|-----------------|----------------------|--|
| <i>Total</i>                              | <i>High risk</i> | <i>Medium risk</i> | <i>Low risk</i> | <i>Very Low risk</i> |  |
| <b>7084</b>                               | <b>1048</b>      | <b>721</b>         | <b>3489</b>     | <b>1826</b>          | <b>2023</b>  |

Inland flood risk is generally spread across the whole of Gwynedd, except for the most mountainous and rural areas. As expected, the largest concentrations of flood risk receptors are located within the most populated areas, with obvious hotspots occurring at Caernarfon, Llanberis, Bethesda, Blaenau Ffestiniog and Y Bala; and in most of these cases the risk is linked to large watercourses flowing through or nearby populated areas. In general, areas where a high number of properties are at risk from a single source are afforded protection in the form of flood defences (e.g. Bala, Porthmadog, Pwllheli), however this is less often the case where source of flooding is more sporadic.

Table 4 suggests that the effects of climate change could be prominent in the future with an increase of 35% in the number of properties at risk from inland flooding; this in addition to an increase in the level of flood risk for present day receptors.

Table 5 summarises the number of properties within various coastal flood risk zones across Gwynedd.

Table 5: Summary of properties at risk of coastal flooding and erosion across Gwynedd

| <i>Number of properties at flood risk</i> |                  |                    |                 |                      | <i>Number of Essential Services / Non-residential properties at flood risk</i> | <i>Properties at risk of coastal erosion</i> |
|---|------------------|--------------------|-----------------|----------------------|--|--|
| <i>Total</i>                              | <i>High risk</i> | <i>Medium risk</i> | <i>Low risk</i> | <i>Very Low risk</i> |  |  |
| <b>6355</b>                               | <b>520</b>       | <b>237</b>         | <b>3471</b>     | <b>2127</b>          | <b>1864</b>  | <b>508</b>                                   |

The areas of highest coastal flood risk are centred around highly populated lowland locations, where large rivers such as the Dysynni, Mawddach, Dwyrdd, Glaslyn, Rhyd-Hîr and the Erch enter Cardigan Bay. There are also areas of increased flood risk in the populated centres along the southern edge of the Menai Strait, including Caernarfon, Y Felinheli and Bangor. Most of the areas at risk of coastal flooding are defended from inundation, however the standard of protection afforded by defences will vary between different areas, and defences in general are not adequate to withstand increase in sea level expected because of climate change. Furthermore, future shoreline policies outlined in SMP2 may dictate that certain defences are

gradually abandoned or moved in-land, which would change the flood risk profile of coastal areas over time as a result.

Table 5 suggests strongly that unmitigated effects of future sea level rise could be significant for coastal areas, with an increase of 50% in the number of properties expected to be at risk of flooding; as per the inland scenario this figure is in addition to the increase in flood risk level expected for present day receptors. The number of properties estimated to be at risk from coastal erosion is also contained in Table 5.

## 7. Our strategic Objectives

The Welsh Government National Strategy provides the framework for flood and coastal erosion risk management in Wales. The framework is centred around five key objectives and the measures to achieve those objectives. The aim of the National Strategy is to ‘reduce the risk to people and communities from flooding and coastal erosion’. The aim is supported by five objectives that complement and overlap each other with the intention of reducing the risk to life. These are summarised in

For this Local Strategy, we have developed our own strategic objectives which both align with the National Strategy objectives and reflect our local context and priorities. Our objectives are listed in Table 6 and have been selected to address our greatest areas of priority whilst considering the Council’s remit for managing risks associated with local flooding and coastal erosion. All objectives are supported by a range of actions, listed and described in section 8.

Table 6: The strategic objectives of our Local Strategy

| Local Strategy Objectives   | Link to National Strategy Objectives |
|---|--------------------------------------|
| <b>Objective 1:</b> To aim to reduce the level of flood and coastal erosion risk to the residents of Gwynedd  | C, D                                 |
| <b>Objective 2:</b> To further develop an understanding of the flood risk to Gwynedd and the impacts of climate change  | A                                    |
| <b>Objective 3:</b> To continue to work with all relevant bodies to ensure appropriate and sustainable development in Gwynedd                                   | B, D                                 |
| <b>Objective 4:</b> Raising awareness of local flood and coastal erosion risk   | A                                    |
| <b>Objective 5:</b> Working collaboratively with all other RMAs and relevant groups/bodies to ensure a coordinated response to flood and coastal erosion events | E                                    |

## 8. Strategic Actions

Cyngor Gwynedd's objectives for managing flood and coastal erosion risk to our communities are listed above, each objective is supported by the range of actions described below. These actions supplement the methods currently employed by the Council to manage flood and coastal erosion risks, as described in section 4.

|   |   |
|---|---|
| <b>Objective 1:</b> <i>To aim to reduce the level of flood and coastal erosion risk to the residents of Gwynedd</i> |   |
| 1.1   | <i>Flood and coastal erosion risk management programmes</i>   |
| Action 1.1A   | <i>Maintain long term capital programme to reduce risk of inland flooding</i>   |
| Action 1.1B   | <i>Maintain long term capital programme to reduce risk of coastal flooding/erosion, incorporating actions identified within SMP2</i>  |
| 1.2   | <i>Flood and coastal erosion risk management improvements</i>   |
| Action 1.2A   | <i>Prepare annual list of schemes from long term action plan to reduce risk of flooding and coastal erosion to be presented for inclusion on WG capital programme</i>                       |
| 1.3   | <i>Management of flood/coastal erosion risk management assets</i>   |
| Action 1.3A   | <i>Develop register and map of highway drainage assets in flood prone areas</i>   |
| Action 1.3B   | <i>Develop register and map of all SuDS elements adopted by the Council</i>   |
| 1.4   | <i>Maintenance and deployment of flood/coastal erosion risk management assets</i>   |
| Action 1.4A   | <i>Prepare and deliver minor works programme (revenue) based on findings of asset condition assessment to maintain standard of protection afforded by flood risk/coastal erosion assets</i> |

|   |  |
|---|--|
| <b>Objective 2:</b> <i>To further develop an understanding of the flood risk to Gwynedd and the impacts of climate change</i> |  |
| 2.1   | <i>Working with partner RMAs</i>   |
| Action 2.1A   | <i>Contribute to stakeholder events with colleagues from partner RMAs and other stakeholders i.e. North Wales Regional Flood Group, West of Wales Coastal Group</i>                              |
| Action 2.1B   | <i>Hold regular discussions regarding flood risk issues within Gwynedd with colleagues from NRW and DCWW</i>   |
| 2.2   | <i>Flood investigations</i>  |
| Action 2.2A   | <i>Develop and improve current mechanisms to identify incidents of flooding within Gwynedd as early as possible</i>  |
| 2.3   | <i>Flooding to highway network</i>   |
| Action 2.3A   | <i>Initiate study to identify areas of the county highway network that are most vulnerable to flooding and will become more susceptible as a results of climate change effects in the future</i> |
| 2.4   | <i>Flood Modelling</i>   |

|             |   |
|-------------|---|
| Action 2.4A | <i>Development of high quality hydrological and hydraulic modelling to build on national maps and better understand flood risk at local level</i>           |
| Action 2.4B | <i>Incorporate most up-to-date climate change projections into all flood modelling exercises</i>  |
| Action 2.4C | <i>Sharing of local flood modelling information with NRW so that national maps can be updated as appropriate</i>  |
| 2.5         | <i>Data Collection</i>  |
| Action 2.5A | <i>Enhancing our network of LoraWAN sensors to measure water levels within watercourses as well as groundwater level in areas of particular interest</i>    |
| Action 2.5B | <i>Develop and implement a monitoring programme for areas of the coastline where cliff instability poses a risk to people, property and infrastructure.</i> |

|  |   |
|--|---|
| <b>Objective 3:</b> <i>To continue to work with all relevant bodies to ensure appropriate and sustainable development in Gwynedd</i> |   |
| 3.1  | <i>Development Planning/Development Control</i>   |
| Action 3.1A  | <i>Incorporation within the Local Development Plan of the requirements contained within TAN15 with regard to Strategic Flood Consequence Assessment</i>                                       |
| Action 3.1B  | <i>Regard within the Local Development Plan of recommendations for future changes in coastal policy, and subsequent implications for land use near the coastline</i>                          |
| 3.2  | <i>Works near watercourses</i>  |
| Action 3.2A  | <i>Review of all policies relating to Land Drainage consenting procedures to ensure best practice is maintained and proposed developers are aware of design and construction requirements</i> |
| 3.3  | <i>Sustainable Drainage Systems (SuDS) and Natural Flood Risk Management (NFM)</i>  |
| Action 3.3A  | <i>Identify opportunities for the implementation of SuDS and NFM schemes in areas which will deliver meaningful flood risk benefits as well as other environmental and amenity benefits</i>   |
| Action 3.3B  | <i>Work with partner authorities and landowners to deliver NFM schemes as part of a national programme</i>  |
| Action 3.3C  | <i>Develop position statement which clearly outlines how NFM schemes should be designed and developed to obtain necessary watercourse consents (S23 and LD bylaws) from Cyngor Gwynedd</i>    |

|  |   |
|--|---|
| <b>Objective 4:</b> <i>Raising awareness of local flood and coastal erosion risk</i> |   |
| 4.1  | <i>Raising awareness of local flood risk</i>  |
| Action 4.1A  | <i>Cyngor Gwynedd will raise awareness of flood risk to its residents</i>                                       |
| Action 4.1B  | <i>Cyngor Gwynedd will advise on and promote flood resilience and resistance measures amongst its residents</i> |

|             |   |
|-------------|---|
| Action 4.1C | <i>Cyngor Gwynedd will prepare and publish an information pamphlet available to all residents within flood risk areas, and any residents that have experienced flooding to their properties</i> |
| 4.2         | <i>Raising awareness of coastal erosion risk</i>  |
| Action 4.2A | <i>Cyngor Gwynedd will raise awareness of coastal erosion risk to its residents, focusing on the most at risk areas</i>   |

|  |   |
|--|---|
| <b>Objective 5:</b> <i>Working collaboratively with all other RMAs and relevant groups/bodies to ensure a coordinated response to flood and coastal erosion events</i> |   |
| 5.1  | <i>Preparation and testing of Emergency Plans</i>   |
| Action 5.1A  | <i>Cyngor Gwynedd will review and update its flood emergency plans alongside North Wales Councils Regional Planning Service; to include evacuation and rest centre plans.</i> |

## 9. Funding and Prioritisation

Measures to manage flood and coastal erosion risk are funded from a range of sources with most of the funding available through the Welsh Government's capital and revenue programmes. Welsh Government run a variety of capital works programmes which are aimed at different types and scales of FCERM schemes. Cyngor Gwynedd will also make funds available for capital works where match-funding is a pre-requisite for Welsh Government grant, and also makes annual contribution towards revenue funding which supplements the grant received from Welsh Government.

Section 10 below explains how Cyngor Gwynedd will develop works programmes (inland and coastal) to benefit from the funding sources described above, with all schemes and/or studies reviewed and prioritised by Welsh Government before funding programmes are announced each year.

The Welsh Government prioritises FCERM schemes which primarily reduce risk to homes. Businesses and public buildings can also benefit from schemes, in particular those which reduce risk to a mix of development types such as homes and shops along a high street or local district centre. Schemes which only reduce risk to businesses remain eligible but should not be prioritised over schemes which reduce risk to homes. Funding is not available to enable new development.

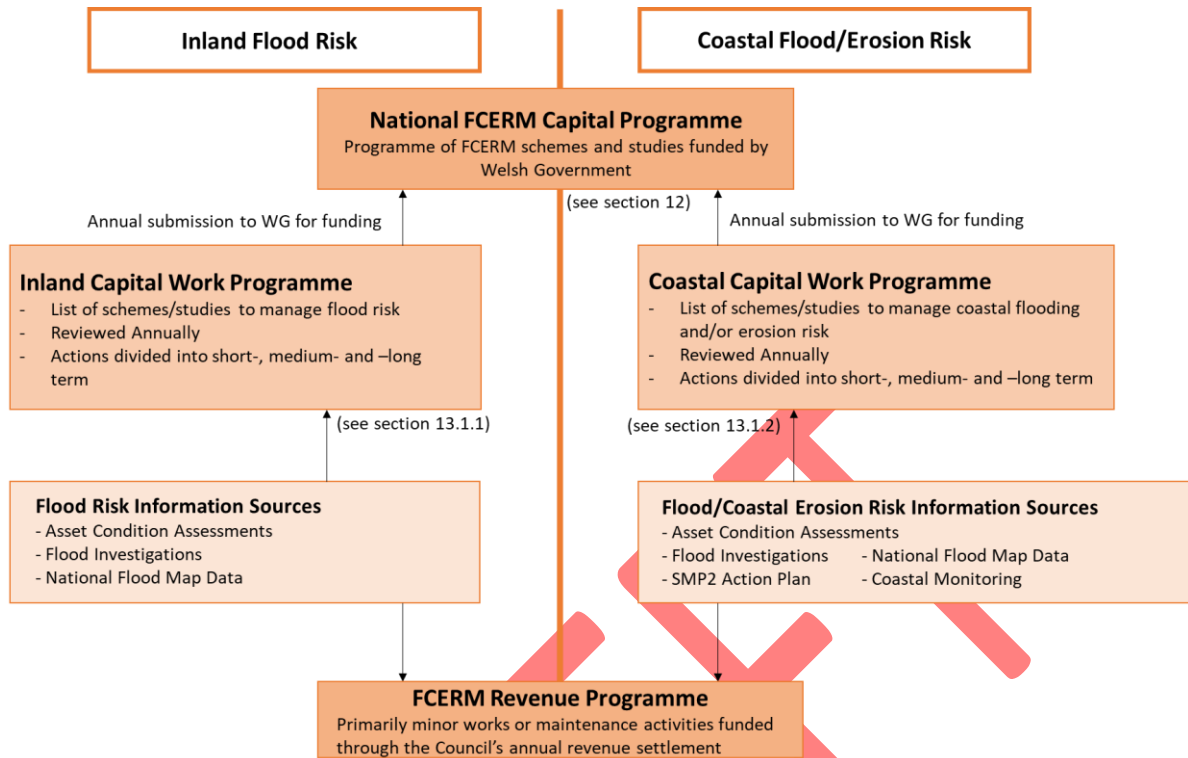
## 10 FCERM Works Programmes

Actions 1.1A – 1.3A in section 8 describe how the Council will prepare long-term capital programmes centred around inland and coastal risks to our communities into the future. The preparation and delivery of our works programmes is pivotal to successful delivery of this Local Strategy.

Figure 2 below summarises how Cyngor Gwynedd FCERM programmes will be identified and promoted, using the different funding streams described above for delivery.



Figure 2: Development and promotion of Cyngor Gwynedd FCERM schemes



Each year Cyngor Gwynedd will prepare a pipeline of FCERM schemes and/or studies to be included on Welsh Governments capital programme for the following year/s, the pipeline submission will be based on the two separate long-term works programmes described below. Whilst we acknowledge that Cyngor Gwynedd are the lead organisation for the schemes and studies included on our programmes, we do anticipate that certain project will involve working in partnership with other RMAs.

Schemes are separated into short-, medium- and long-term projects according to priority (<5 years, 5-10 years and 10+ years respectively). Priority will mainly be assigned according to level of flood/coastal erosion risk, but other factors such as the Council's legal responsibilities will also influence priority. The selection of schemes from our programmes onto the annual pipeline will be according to priority and the Council's confidence of delivering a scheme or stage of scheme within the approaching funding window.

## 11. Monitoring progress

As the LLFA, Cyngor Gwynedd is responsible for monitoring the implementation of this Local Strategy. Measuring progress of strategy implementation will focus upon the delivery of the actions described in section 8, and the benefits derived from these actions. All actions have been developed to supplement the methods currently employed by the Council to manage FCERM risks, in order to achieve the objectives within this Local Strategy.

Measures will focus on but not limited to the following aspects:

- Number of properties benefitting from FCERM schemes included on the capital work programmes described under Actions 1.1A and 1.1B (and further in section 13.1 above)
- Long-term value to the Council of the schemes included on the capital works programmes (described under Actions 1.1A and 1.1B)
- Number of our FCERM assets in adequate condition to fulfil their function
- Effectiveness of flood investigation procedure

## 16. Environmental assessments

Assessments have been undertaken alongside the development of this Local Strategy to ensure the Objectives and Actions presented take into account potential impacts on the environment.

A Strategic Environmental Assessment (SEA) is a way of assessing and monitoring the likely effects (positive and negative) of plans, programmes and strategies on the environment. It applies at the level of the plan or strategy (i.e. Local Strategy) which sets the direction for future development projects.

The SEA was developed alongside this Local Strategy and is contained within a separate report.

A Habitats Regulations Assessment (HRA) considers the possible harm a project or plan could cause to certain specially protected sites, with the aim of ensuring damage to these sites is avoided.

Due to the potential of this Local Strategy to impact the Natura 2000 network of protected sites, namely Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites, it was identified that a HRA needed to be undertaken in parallel with the SEA process.

The full HRA is contained within a separate report.