

Appendix D: Gwynedd Council's proposed objectives and actions for managing flood and coastal erosion risk to our communities

Objective 1:	<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>
	Gwynedd Council will prepare and maintain a long-term programme of studies and schemes to manage the risks of inland (river and surface water) flooding upon our communities. The programme will contain high-level details of the objectives and potential benefits of each item and identify opportunities to work alongside partner organisations and/or other stakeholders. The programme will be reviewed and updated annually as more information regarding flood risk and flooding incidents becomes available.
Action 1.1B	<i>Maintain long term capital programme to reduce risk of coastal flooding/erosion, incorporating actions identified within SMP2</i>
	Gwynedd Council will prepare and maintain a long-term programme of studies and schemes to manage the risks of coastal flooding and coastal erosion upon our communities. The programme will contain high-level details of the objectives and potential benefits of each item and identify opportunities to work alongside partner organisations and/or other stakeholders. Our programme will incorporate the actions identified within SMP2 to move towards a sustainable approach of coastal management. The programme will be reviewed and updated annually as more information regarding risk and condition of coastal assets becomes available.
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>
	Our works programmes (inland and coastal) will form the basis of our annual submission of studies and schemes to be included on the national FCERM programmes thereby securing grant support from Welsh Government. As well as reducing flood and coastal erosion risks all schemes will be developed with the aim of maximising environmental and socio-economic benefits to the study areas. This will include reducing any adverse effects on designated ecological sites which will be driven by EIA and HRA processes.
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>
	Information regarding the layout of surface water drainage systems within the Council's ownership and responsibility, as well as supporting records, are often incomplete. The Council will work to improve the records that exist in high surface water flood risk areas, so that opportunities to improve the network can be identified and that adequate maintenance and/or management plans can be developed to reduce surface water flood risk for our communities.
Action 1.3B	<i>Develop register and map of all SuDS elements adopted by the Council</i>

	I their role as SAB Gwynedd Council has a duty to adopt sustainable drainage systems that have been constructed to comply with national standards. The Council will develop a detailed inventory of adopted drainage systems, including information on the construction and function of each element as well as appropriate inspection and maintenance schedules.
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>
	Following completion of our asset inspection programme the Council shall identify a risk-based programme of maintenance or minor works to ensure that asset condition is maintained and present-day standard of protection is not compromised. Any works that cannot be carried out using the Council's dedicated revenue budget for any given year will be included on a capital works programme (see Actions 1.1).

Objective 2:	<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>
	Working alongside partner RMAs and other stakeholders at a local and regional level will allow Gwynedd Council to better understand flood challenges from all sources, and make us aware of policies, studies or schemes that are proposed by partner authorities to manage flood risk. Regular discussions with other organisations will also enable us to identify opportunities for partnership working, by sharing resources or knowledge to address challenges.
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>
	Experience has shown us that information gathering exercises following storm events can take longer than we would like which can delay the commencement of investigation work. We are also aware that the Council are not alerted of all incidents of flooding to properties. Therefore, to build up a complete picture of flood impacts and to enable us to engage with effected residents as early as possible we intend to look at alternative methods of collecting information.
2.3	<i>Flood Modelling</i>
Action 2.3A	<i>Development of high quality hydrological and hydraulic modelling to build on national maps and better understand flood risk at local level</i>

	Detailed investigation of flood risk in high-risk areas will be supplemented by modelling work to enable the Council to estimate the extent and depth of flooding for a range of rainfall and/or tidal events and also for various conditions (blockages, defence failure etc.).
Action 2.3B	<i>Incorporate most up-to-date climate change projections into all flood modelling exercises</i>
	All hydrological and/or tidal modelling exercises carried out to inform investigation or design work will make the correct allowances for future climate change effects, based on the most up to date available guidance
Action 2.3C	<i>Sharing of local flood modelling information with NRW so that national maps can be updated as appropriate</i>
	All hydrological and/or tidal modelling exercises carried out to inform investigation or design work will comply with NRW modelling standards to allow the national flood maps to be updated with more detailed and current information as appropriate.
2.4	Data Collection
Action 2.4A	<i>Enhancing our network of LoraWAN sensors to measure water levels within watercourses as well as groundwater level in areas of particular interest</i>
	Gwynedd Council are in the process of developing a network of telemetry sensors that can continually measure tidal level, the level of water within watercourses and groundwater. We intend to enhance the current network of sensors to build a better picture of the areas most affected by storm events. Further application of the sensors should also enable the Council to be alerted when flood risk requires intervention (e.g., to clear a blocked screen or culvert).
Action 2.4B	<i>Develop and implement a monitoring programme for areas of the coastline where cliff instability poses a risk to people, property and infrastructure.</i>
	The risk of coastal erosion is prevalent along certain areas of the coastline which could lead to instability of property or infrastructure in certain locations. Gwynedd Council is to identify the areas where coastal erosion risks are highest and develop a programme to monitor any movements within the cliff face so that risk can be measured over time and actions to manage these risks can be identified.

Objective 3: *To continue to work with all relevant bodies to ensure appropriate and sustainable development in Gwynedd*

3.1	Development Planning/Development Control
Action 3.1A	<i>Incorporation within the Local Development Plan of the requirements contained within TAN15 with regard to Strategic Flood Consequence Assessment</i>
	Gwynedd Council's Local Development Plan is currently under review with replacement plan intended for 2027 in preparation. The replacement plan will be guided by a Strategic Flood Consequence Assessment undertaken in accordance with the updated version of TAN15 (Development, flooding and coastal erosion) scheduled for publication in 2023, along with the information contained within the Flood Map for Planning, in order to direct new developments away from areas at flood risk.

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>
	The current Local Development Plan includes a Climate Change Management Area policy intended to direct vulnerable developments away from coastal areas that may face a greater risk of flooding and/or coastal erosion in the future due to changes in coastal policies, as outlined in the SMP2. The replacement plan will also include an equivalent policy, whilst taking into consideration specific land use recommendations that may have derived from subsequent coastal adaptation planning studies.
3.2	<i>Works near watercourses</i>
Action 3.2A	<i>Periodic 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>
	<p>Gwynedd Council is opposed to the culverting of watercourses because of the adverse ecological, flood risk, human safety and aesthetic impacts. Watercourses are important linear features of the landscape and should be maintained as continuous corridors to maximise their benefits to society. The Council have a culverting policy which explains to applicants in which circumstances culverting is appropriate and also provides general design criteria. We shall review the content of this policy on a periodic basis to ensure that this guidance provided is fit for purpose and in line with industry guidance.</p> <p>Opportunities to deliver environmental enhancement will be included in such policies where relevant, including proactive use of green infrastructure, reducing volume of silt run-off, and restoring natural processes. WFD objectives and measures are to be delivered where reasonable to do so.</p>
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>
	<p>SUDS are drainage systems that are considered to be environmentally beneficial, causing minimal or no long-term detrimental damage. They are often regarded as a sequence of management practices, control structures and strategies designed to efficiently and sustainably drain surface water, while minimising pollution and managing the impact on water quality of local water bodies.</p> <p>NFM involves working with nature to reduce the risk of flooding for communities. It uses various techniques to restore or mimic the natural functions of rivers, floodplains and the wider catchment. It aims to store water in the catchment and slow the rate at which water runs into rivers, to help reduce flooding downstream.</p> <p>A key priority of the National Strategy is to deliver more schemes of this kind, and with this in mind Gwynedd Council will identify urban and upland areas that are suitable for delivery of SuDS and NFM interventions respectively, either as stand-alone projects or as part of wider flood risk management schemes.</p>
Action 3.3B	<i>Work with partner authorities and landowners to deliver NFM schemes as part of a national programme</i>

	As funding becomes available for NFM schemes Gwynedd Council will identify and work alongside landowners and partners to deliver successful projects that realise all potential benefits associated with NFM.
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 Gwynedd Council</i>
	As explained above Gwynedd Council are responsible for consenting of in-channel works as well as works adjacent to ordinary watercourses. In this role our general aim is to ensure that river channels remain free from obstruction to allow effective conveyance of flow and reduce risk of out of channel flooding. However, some NFM measures are generally opposed to this idea and instead look to re-connect the channel with its floodplain further up the catchment from flood-prone areas, so that peak flows are delayed. Gwynedd Council will develop a position statement to establish design criteria for NFM measures which require our consent to avoid any conflict with our current consenting procedures.

Objective 4: Raising awareness of local flood and coastal erosion risk	
4.1	Raising awareness of local flood risk
Action 4.1A	<i>Gwynedd Council will raise awareness of flood risk to its residents</i>
	As the Council considers the risk of flooding to a community through a scheme or a study we will engage with residents and business/property owners of the area of interest to make them aware of risk from different flood sources. We shall also let our communities know where to find the most up to date information relating to flood risk.
Action 4.1B	<i>Gwynedd Council will advise on and promote flood resilience and resistance measures amongst its residents</i>
Action 4.1C	<i>Gwynedd Council 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>
	The Council encounter many residents that face a continuous risk of flooding to their properties, and in some cases reducing the level of risk is not feasible or viable. In such cases we shall advise our residents on ways to live alongside the risk in the form of an information pamphlet prepared alongside the National Flood Forum. We shall also provide advice on methods to reduce the likelihood of damages through property level protection, and direct our residents towards reputable agents or suppliers that can provide the quality assured products.
4.2	Raising awareness of coastal erosion risk
Action 4.2A	<i>Gwynedd Council will raise awareness of coastal erosion risk to its residents, focusing on the most at risk areas</i>
	Gwynedd Council will engage with residents and business/property owners in areas where coastal erosion is of concern in order to make them aware of present-day risks and any likely changes in ground stability over time. We shall also let our communities know where to find the most up to date information on coastal erosion risk.

Objective 5:	<i>Working collaboratively with all other Risk Management Authorities 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>Gwynedd Council will continue to review and update its flood emergency plans alongside North Wales Councils Regional Planning Service; to include evacuation and rest centre plans.</i>