



Guidance note

Flood Map Challenge

Reference number: GN 029

Document Owner: Flood Risk Management Board

Beth sydd yn y ddogfen?

Os oes gennych reswm i ddymuno Map Llifogydd sy'n arwain at newid, mae'r canllaw hwn yn nodi beth sydd angen i chi ei wneud a sut y byddwn yn ymateb.

What is this document about?

If you have reason to wish to challenge the Flood Map leading to a change, this guidance sets out what you need to do and how we will respond.

Who is this document for?

This guidance is for developers and their consultants and for NRW Flood Risk Analysis Teams. It may also be useful for our Development Planning teams.

Contact for queries and feedback

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Croesewir gohebiaeth yn y Gymraeg a'r Saesneg / Correspondence welcomed in both Welsh and English.

Version History

Document Version	Date Published	Summary of Changes
draft	29/3/2018	First draft for consultation
V1	5/6/2018	First version
Review Date: [June 2020]		

To report issues or problems with this guidance [contact Guidance Development](#)

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Background

Besides informing Risk Management Authorities (RMAs), Insurers and the general public about flood risk, the flood map data, in the form of the Development Advice Map¹ (DAM), is used for the control of development in the flood plain as defined by TAN15.

The DAM is derived from the extreme flood outline from the Flood Map², which in turn is created by combining the outputs from hydrological/hydraulic models with records of historic flood events. The model output and flood data have been derived over many years from the best available data. This data comes with uncertainty due to limits of accuracy in measurement and modelling methods. NRW improves the map data, case by case, based on risk. Most of the river and tidal floodplain in Wales is covered by a generalised model, but in the areas of high risk to people, for example urban areas, the map has been replaced by outputs from more detailed local modelling.

Please note that whereas in the early days of the Flood Map there were examples of gross errors that were open to challenge; in the intervening years the quality and accuracy of the modelling and mapping has improved considerably and the present day maps are far more robust than the originals.

We acknowledge that there remain areas where, due to perceived inaccuracies in the map, there may be an overestimate of risk and this in turn may deter development that should rightly be considered to have an acceptably low risk. This guidance defines the process for parties external to NRW to challenge the Flood Map and the Development Advice Map.

¹ The Development Advice Map refers to risk of flooding from rivers and the sea, it is not designed for other sources of flooding

² NRW long term flood risk – see <https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en>

The Flood Map Challenge

Flood Map Challenge Form

To begin the process of challenging our Flood Maps you must read this guidance carefully, complete and sign the OGN 29 Flood Map Challenge Form and submit the completed form to the local Flood Risk Analysis Team.

Models and Data

The Flood Map is based on evidence in the form of records of real flood events or mathematical models. In order to challenge the Flood Map new evidence must improve on the existing standard of evidence.

As we have models of one kind and another for the whole floodplain, the start of the process is to contact us to see what historic flood or modelling data is available.

If we have a model, it is recommended that it is used to form the basis of any new model. Models may be obtained by contacting our Data Distribution Team. There may be a charge for the model, but this is small in relation to the cost of a flood model. In some cases, we will not have any suitable data and a completely new model is required.

Regardless of whether the model is to be revised or built from scratch, it is advisable to contact the local Flood Risk Analysis Team at the start to discuss the approach and the level of modelling required.

Flood Modelling

Guidance Notes for estimation of flows (GN 008) and hydraulic modelling (GN 028) are available on the NRW website.

Model Checklist

A Flood Map challenge will be checked using the Flood Model Checklist (see GN 028). We recommend that the challenger goes through this checklist and submits a completed version alongside the model, report and maps. This checklist is intended as a guide and does not preclude further checks where appropriate.

Evaluation/Peer Review

The local Flood Risk Analysis Team will evaluate the model report, interrogate the model and hydrology and re-run it to more fully understand outputs and how it has been developed. This allows checks on the stability of the model to be carried out and results provided for comparison.

In some cases, we may not have the software available to do a detailed assessment of the model submitted. In these instances, the model will be sent to a third party consultant for independent peer review.

Flood Map Change Note

Diagrams showing the proposed changes to the affected zones are required to show the extent of the change against suitably detailed background context maps.

If the challenge is upheld, we will complete a Flood Map Change Note and this will be circulated to staff internally for approval.

Changing the Flood Map

Once the change note is approved the changes will be made to our spatial database.

The changes will then be resolved into the Flood Map at the next quarterly update, after which they will be available to view on the NRW website and for download from Lle.

Flood Map Components

The components of the **Flood Map** subject to challenge are Flood Zone 2, Flood Zone 3 and Areas Benefitting from Defences (ABDs).

Flood Zone 2:

- the extent of a flood from rivers or from the sea with up to a 0.1% (1 in 1000) chance of happening in any given year
- contains areas recorded to have flooded in the past.
- Flood Zone 2 is important from a planning context as it forms the basis of Zone C in the Welsh Government Development Advice Map (DAM)

Flood Zone 3:

- the extent of a flood from rivers with a 1% (1 in 100) chance or greater of happening in any given year
- the extent of a flood from the sea with a 0.5% (1 in 200) chance or greater of happening in any given year

ABD:

- the difference between Flood Zone 3, the area flooded without the presence of defences, and the equivalent event modelled with defences.

The **Development Advice Map** is composed of Zones A, B and C1/C2.

- The three main zones relate to the risk of flooding from rivers and the sea, the definitions can be found in TAN15:
- Zone A – is the outside of the union of Zone B And Zone C, i.e. at very low risk
- Zone B – Areas where there is evidence of flooding in the geological record.
- Zone C - Areas where the risk of flooding is greater than 0.1% AEP, this is equivalent to Flood Zone 2 above.
- Zone C is divided into Zones C1 and C2.
- Zone C1 is defined as being areas of the floodplain which are developed and served by significant infrastructure, including flood defences.
- Zone C2 is defined as areas of the floodplain without significant flood defence infrastructure.

Changes to Zone C will follow automatically from changes to Flood Zone 2. For new Zone C1 to be created, the area must be defended to a standard of protection; for rivers in excess of 1% chance, and for the sea in excess of 0.5% chance of happening in any given year. In order to ensure future sustainability, this standard of protection should be maintained with regard to climate change for the next 100 years.

Data Requirements

The proposed new outline(s) must be submitted in the form of an ESRI shapefile.

Projected Coordinate System:	British_National_Grid
Projection:	Transverse_Mercator
False_Easting:	400000.00000000
False_Northing:	-100000.00000000
Central_Meridian:	-2.00000000
Scale_Factor:	0.99960127
Latitude_Of_Origin:	49.00000000
Linear Unit:	Meter

Geographic Coordinate System:	GCS_OSGB_1936
Datum:	OSGB_1936
Prime Meridian:	Greenwich
Angular Unit:	Degree

Liability

TAN15 is clear that the responsibility for undertaking assessments of flood risks and consequences rests with the developer. Liability for flood modelling undertaken by third parties in support of subsequent planning applications rests with the consultant who carried out the modelling. In most instances, appropriately qualified (and insured) consultants will undertake this work.

Fitness for Purpose

Agreeing that the model inputs and assumptions are appropriate does not mean we are agreeing that the model is fit for all purposes, that potential development proposals are appropriate, or that we will make no further comment on flood risk. It does mean that the model the developer has produced is suitable to change the Flood Map.

Remember that:

- NRW is responsible for the verification of the calculations, outputs and conclusions contained in a successful Flood Map Challenge;
- Flood risk cannot be eliminated and is expected to increase over time as a result of climate change and it is the developer's responsibility to ensure a safe development;
- It is possible that the results of our assessment of a model could be requested under Freedom of Information/Environmental Information Regulations;
- The final decision on whether a planning application goes ahead rests with the Planning Authority based on advice from NRW on flood risk. Flood risk is one of many considerations the Planning Authority has to take into account.

References

GN 008 Flood Estimation
GN 028 Modelling for FCAs
GN 029 Flood Map Challenge Form

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