



Llywodraeth Cymru
Welsh Government



Wales Flood Response Framework

December 2016



Cymru Gydnerth
Wales Resilience

Mae'r ddogfen yma hefyd ar gael yn Gymraeg.
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INTRODUCTION

Purpose of the Framework

This framework explains and summarises the generic response to flooding in Wales. It is intended primarily for those who participate in, and support, the response of communities affected by flooding but it will also help inform the public on how responder agencies plan for, respond to and recover from, flooding incidents.

The purpose of the Framework is to:

- bring together in one document local, regional and national advice, guidance and key policies on flood response in Wales to create a single point of reference for responder agencies and the public;
- establish clear thresholds for emergency response arrangements at all levels in Wales;
- signpost the forecasting and warning systems which are in place;
- explain how we respond on a multi-agency basis to a flood event affecting Wales;
- raise awareness of flood risk and flood planning response; and
- explain the communication process used before and during a flood event.

The key outcomes from flood response planning supported by this framework are:

- the protection of lives, property and environment from flooding incidents;
- a nation that is more resilient to future flooding events;
- responses to flooding events that are judged to be effective and efficient;
- an improved understanding by all of the wider impacts of flooding; and
- a reduction in the overall risk to residents of Wales to the impacts of flood events.

What is not included within the Framework:

- the detail of the single or multi-agency response plans at the local level;
- the all-Wales structures which are based on the generic response arrangements established under the Pan-Wales Response Plan but with necessary variations aimed at the specific risks and impact posed by flooding incidents;
- the framework does not extend to the recovery phase;
- this document covers Wales only. Similar documents to respond to flooding have been developed by Defra, Scottish Government and Department of Agriculture and Rural Development, Northern Ireland Government.

The Wales Flood Response Framework has been produced by the Wales Flood Group on behalf of the Wales Resilience Forum. The Wales Flood Group includes representatives from key agencies involved with flood warning, response and recovery activities across Wales (see annex 1).

The document is a living document which will be reviewed by Wales Flood Group every two years or following lessons learned from incidents or exercises, restructuring of organisations or changes in processes.

Flooding in Wales

Flooding and the effects of climate change are important issues for the Welsh Government. It is a constant, but unpredictable, threat which can occur at any time during the year. Accurate forecasting of weather systems and the flooding which can result now provide earlier predictions of where and when significant flooding might occur. However, many storms remain dynamic in their nature and this can present challenges for predicting the exact timing and impacts of flooding at a local level. Our capacity to respond to flooding in Wales has to take account of this.

The Minister for Natural Resources and Food with responsibility for Flood and Coastal Erosion Risk Management stated:

December 2013: *“My view is that this modelling does give us indications, but, quite often, even the most sophisticated modelling cannot absolutely accurately predict the impact of nature. The modelling itself enabled us to plan a response, but we obviously need to have the capacity to respond to exactly what happens, as it happens”*

January 2014: *“Accurate forecasting also meant that affected communities were better prepared before the flooding hit”*

In Wales, the pattern of development historically was along the sea and rivers. This has contributed to Wales having over half a million people living and working on our floodplains.

Natural Resources Wales indicate that in Wales (2016 data):

- 208,500 properties are at risk from river and/or sea flooding, 148,000 of those are residential properties.
- 163,000 properties (120,000 residential and 43,000 non-residential) are at risk of surface water flooding, some of these properties are also at risk of flooding from rivers and/or the sea.

The risk posed by coastal flooding is one of the highest priorities on the National Risk Register. The risk is of an event similar in consequence to the 1953 east coast flooding emergency caused by a combination of high tides, a major tidal surge, large waves and onshore gale force winds.

Experiences in recent times have highlighted the increased threat from flooding, particularly around our rivers, our coastline and as a result of surface water flooding.

As we witness future climate change we can expect to see changes to our weather in the coming years including:

- hotter, drier summers;
- milder, wetter winters;
- an increase in the frequency of storms; and
- an increase in the intensity of rainfall events;

These changes result in an increased risk of flooding and sea level rise.

Whilst the risks from flooding can be mitigated by building, maintaining and improving defences, the risk can never be eliminated. The above factors will lead to greater risk of

severe flooding and will put our flood risk infrastructure (for example, defences and pumping stations) under increasing pressure of overtopping or failure.

We need to ensure our future systems operate effectively when they are required to and have preparations in place when those systems are overwhelmed by nature.

The Wellbeing of Future Generations (Wales) Act (2016), places a duty on all public bodies, including Welsh Government, local authorities and Natural Resources Wales to give consideration to social, environmental, economic and cultural well-being in all decisions made.

Types of flooding

River (fluvial) flooding occurs when a watercourse can no longer hold the amount of water entering the system and it overflows. This can be caused by:

- high or intense rainfall;
- blockage of watercourses;
- failure or damage to river channel embankments/defences;
- melting of snow;
- reservoir overtopping (see also reservoir flooding below);
- or a combination of any or all of these factors.



Figure 1: Flooding in St Asaph, Denbighshire, January 2012 (Photo courtesy of NRW)

Surface water (pluvial) flooding occurs when impermeable surfaces, steep slopes or saturated soil stops rain water entering the ground, forcing it to pond, flow over land and gather in low lying areas. It can occur in both urban and rural areas.

Surface water run-off can remove soil and fertilisers and find its way into the drainage systems. These systems are often not designed to deal with long or heavy periods of rainfall and eventually stop water entering, become blocked and overflow. Run-off directly into rivers can also result in flash flooding and pollution. Roads across much of Wales are particularly susceptible to surface water flooding as a result of run off during periods of rainfall when the surrounding land is saturated. The steep topography of many parts of Wales can also lead to rapid surface water flows through communities which damage properties and structures.

Coastal flooding usually occurs when high tides combine with severe weather which causes storm surges and large waves. Tidal rivers and estuaries are particularly susceptible when high tides combine with high river levels. Climate change and sea-level rise will mean that this risk will continue to increase.



Figure 2: Coastal storms and overtopping at Aberystwyth (Photo from NRW)

Groundwater flooding usually occurs after long periods of intense rainfall. It occurs as a result of water rising up from the rocks below, or from springs. This causes the water table to rise above normal levels and often up to the surface.

Sewer flooding occurs where there is a sudden or large discharge from a sewer when the capacity of the system is exceeded. This is especially prevalent in urban areas where rainfall very quickly gets into sewage networks along paved areas such as roads and footpaths.

Reservoir flooding occurs where above ground reservoir storage fails and large quantities of water are released or where a very extreme event occurs leading to spillway capacities being exceeded and overtopping of the structure. Although flooding from

reservoirs has a very low likelihood of occurring, the consequences can be catastrophic and are not always predictable.

Scales of flooding

Localised flooding indicates a small number of isolated or localised flood incidents that could occur across an area. Significant localised flooding could occur during a summertime thunderstorm and whilst only a small area affected, the impacts could be severe as minor streams rise rapidly, flooding properties and infrastructure, hence, the incident is localised but impacts could be significant.

Widespread and/or major flooding impacts could include coastal flooding along a coastline, overtopping of riverbanks or pluvial flooding at several locations across one or more local authorities. This could include impacts to property, road, rail and utility infrastructure and to public buildings. Major flooding is also referenced here as the terms are sometimes used together where numerous areas witness significant or prolonged flooding bringing risk to life. Major flooding can also be referenced when significant impacts occur in one place but, due to its scale, will still have wider effect on people and infrastructure.

Case Study

January 2014 coastal flooding

Our coordinated response to large scale flood events in Wales was tested, and worked well in the response to the wide scale coastal flooding in December 2013 and January 2014. Wide scale flooding around the entire coast of Wales occurred in January 2014 as a result of high tides combined with a storm surge and gale force winds. This resulted in 150 properties flooding, more than 1000 properties advised to evacuate and over £8 million of damage to coastal defences. Over a 5 day period 21 flood alerts, 103 flood warnings and 6 severe flood warnings were issued.

Impacts were felt across the country and over all four Local Resilience Fora areas resulting in all four Strategic Coordination Groups sitting. The Met Office and NRW provided advice and support to all the LRFs and Welsh Government on the ongoing weather and flood conditions and forecast.



Figure 3: Storms at Aberystwyth January 2014

RESPONDING TO FLOOD EMERGENCIES

Many flood incidents are local in nature and the response to these is therefore locally based. The majority of such incidents can be managed at a local level by local responders; however the scale and nature of some flooding incidents will require the support of a wider multi-agency management structure for the effective co-ordination of their joint response. In such circumstances the management of flood incidents will be based upon the generic incident management structures by means of a tiered structure for the co-ordination of the multi agency response i.e. Strategic (Gold), Tactical (Silver), and Operational (Bronze) as discussed in figure 4 below.

Strategic (Gold) Coordinating Group	
Location – Strategic Co-ordination Centre.	
Members – Chief/Senior officers from Police, Fire & Rescue Service, Local Authorities, Welsh Ambulance Service NHS Trust, Health Board, Natural Resources Wales, Utilities, Welsh Government and representatives from other organisations as appropriate.	
Tactical (Silver) Control	
Location – Near to the incident / emergency / location to be determined by responders.	
Members – Senior Managers / tactical management – implementation of strategy and policy.	
Expert advisors as deemed necessary, Police, Fire & Rescue Service, Local Authorities, Welsh Ambulance Service NHS Trust, Health Board, Natural Resources Wales, Utilities and representatives from other organisations as appropriate.	
Operational (Bronze) Control	
Location – at the scene or at other locations e.g. impacted communities, survivor rest centre, traffic control.	
Resources deployed and tasks carried out by operational managers and first responders (response team workers).	
Police, Fire & Rescue Service, Ambulance Service, Local Authorities, Natural Resources Wales and other organisations involved in operational response.	

Figure 4: Tiered structure for coordination of a multi agency response showing the groups and locations of the different multi agency response levels to a flood incident.

Operational Response (Bronze)

Operational response is the immediate response on the ground to the flood event and is undertaken at the affected area(s).

Personnel first on the scene will take immediate steps to assess the nature and extent of the flood. Operational commanders become responsible for implementing the tactical commander's tactical plan within their geographical area or functional area of responsibility.

Tactical Response (Silver)

Where widespread flooding occurs, or a potential significant event is forecast, a Tactical Co-ordinating Group ('Silver' Group) may be established at an appropriate Police Divisional headquarters, or alternative suitable premises to co-ordinate the response.

Its purpose is to ensure that the actions taken at the operational level are co-ordinated, coherent and integrated in order to achieve maximum effectiveness and efficiency. Working in co-ordination the responder agencies' tactical commanders will:

- determine priorities for allocating available resources;
- plan and co-ordinate how and when tasks will be undertaken;
- obtain additional resources if required;
- assess significant risks and use this to inform tasking of operational commanders;
- ensure the health and safety of the public and personnel; and
- communicate impacts and response to Welsh Government.

Strategic Response (Gold)

In response to a major flooding incident a Strategic Coordinating Group (SCG) or 'Gold Group' may be established at Police headquarters to provide strategic command and control to the incident and manage the response. This will be supported by the Strategic Coordination Centre (SCC) established at the same location. The procedures for establishing a SCC are embedded within LRF plans. Membership of this group is outlined in figure 4. Agencies will be invited to attend multi-agency meetings by phone if necessary.

A generic set of strategic intentions of a SCG are outlined in annex 3, however these may vary slightly and will be set out within their own response plans.

Further information about the tiers of command can be found on the Joint Emergency Services Interoperability Programme (JESIP) website: <http://www.jesip.org.uk/command>

The decision to escalation from Bronze to Silver to Gold is taken by the Category 1 responders when felt necessary.



Figure 5: Flooding at St Fagans, Cardiff (Photo courtesy of Cardiff Council)

Triggers

Figure 6 below outlines the arrangements for organisations responding to flooding from a local level up to national scale flood events. The level of response activation, activity and escalation is determined by the organisations responding to the event.

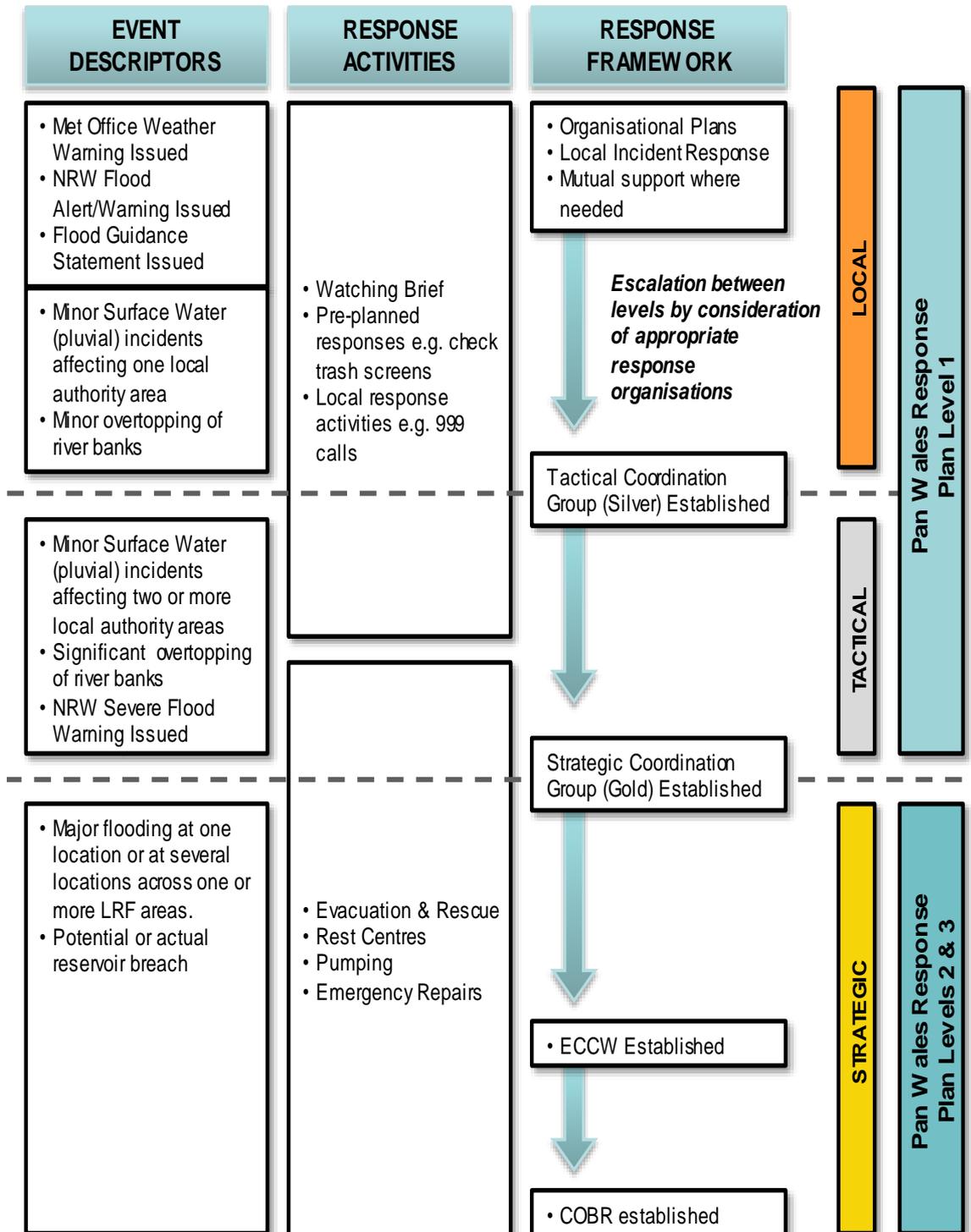


Figure 6: Guide to activities and response arrangements for flood event in Wales. These generic arrangements are flexible and can be adapted to the location and event. For example, evacuation can be undertaken as a precautionary measure pre flooding. Decisions on trigger points will be agreed between agencies.

Escalation Triggers

Local Authority plans will be activated and scaled down at any time according to the circumstances and agreed local arrangements as set out in the plans. These local multi agency plans are developed and led by LRF's.

The decision on whether to activate the Pan-Wales Response Plan¹ (as opposed to local responses which continue to operate according to local arrangements) will be taken by the Welsh Government in conjunction with Category 1 or 2 responders with lead or major responsibilities in the emergency (and where appropriate in conjunction with UK Government).

The decision to escalate or de-escalate the pan-Wales response will be taken by the Civil Contingencies Group (CCG) or Wales Civil Contingencies Committee (WCCC). These decisions will be cascaded to all agencies by the Welsh Government.

There will be a flexible response to emergencies based on the circumstances that exist at the time. For example, in an emergency impacting primarily on a single LRF area, the Welsh Government will consult the Strategic Co-ordinating Group (SCG) concerned to assess whether the establishment of the ECC(W) and the formation of the CCG/WCCC would assist the response.

Responsibilities during flood emergencies

Local Resilience Forum

There are four Local Resilience Fora in Wales; Gwent, South Wales, Dyfed Powys and North Wales each with their own detailed and agreed flood plans and arrangements for responding and recovering from flooding.

Once a flood incident occurs, multi-agency tactical response centres may be established, attended by appropriate staff from the responding agencies. These tactical officers will liaise with their respective organisations which, in turn may have operational staff deployed on the ground.

In the event that the incident will require a strategic lead, the LRF strategic coordinating group will be established to provide support, strategic direction and communication with Welsh Government through the flood emergencies mailbox and resilience team. Decisions on resourcing, mutual aid, media management and priorities will be managed by the senior officers of multi-agency organisations represented on this group.

The LRF Strategic Coordinating Group will communicate with Welsh Government through the flood emergencies mailbox and resilience team.

Following a multi-agency flooding incident the LRF, normally through the LRF Coordinator, will organise a multi-agency debrief, then share and publish recommendations from the debrief accordingly. The LRF severe weather group will normally be tasked with completing any relevant actions falling out of such reviews, though other LRF Sub-Groups can be involved.

¹ <http://walesresilience.gov.uk/behindthescenes/walesresilience/panwalesresponseplan/?lang=en>

A recommendations following Exercise Megacyma in March 2015, was to consider the response to flooding which crosses LRF areas. Welsh Government are currently discussing this issue with UK Government and LRF around Wales and this Framework will be updated when a position is agreed.

Natural Resources Wales (NRW)

During a flood event, NRW are responsible for:

- monitoring rainfall, river and tide levels;
- making forecasts of potential river and coastal flooding up to 5 days ahead at a community level using Met Office rainfall and coastal forecast data and local Natural Resources Wales flood forecasting models;
- contributing to the Flood Guidance Statement for England and Wales, including agreeing the risk status for Welsh counties;
- initiating and chairing Flood Advisory Service meetings with LRF partners in advance of forecast flooding to share information and agree any escalation;
- using these forecasts and local observations to issue flood warnings directly to the public and professional partners using Floodline Warnings Direct;
- Severe Flood Warnings are issued in liaison with the Met Office, Fire and Rescue Services, relevant local authorities and Police as appropriate;
- providing information to the media as appropriate to alert the public to developing flood risk and what they can do to be prepared for flooding;
- provide information to Welsh Government through 'Situation Reports' (SitReps) in order to keep Welsh Ministers and officials informed of predicted and actual impacts as well as NRW's response;
- providing appropriate operational emergency response to NRW defences and other NRW operational assets, including deployment of teams on-site;
- maintaining internal Flood Incident Management response during widespread flooding, NRW will also maintain their internal Flood Incident Management response including Silver Command support and flood warning information updates as appropriate.

Natural Resources Wales delivers this through the establishment of Incident Rooms at local and national levels before and during flooding supported by rosters of duty officers who undertake a programme of training and exercising to enable delivery of these flood incident management duties.

Local authorities

Local authorities have a significant role to play in responding to flooding within their boundaries. This role will vary between authorities and will be dictated by the nature of the incident. Depending on the situation there may be a need to set up the Council's Control and Co-ordination room.

The primary areas where the local authority may become involved are:

- The support of the emergency services and other agency's involved by mobilising services of the Council who will initiate their own internal arrangements such as Highways, Drainage etc;
- To work with other agencies to provide support to local communities during an emergency and in their recovery;
- To continue to provide normal services at an appropriate level.

An incident response teams within the Local Authorities may be established at the offices of the affected authority in response to localised flooding within the authority area to co-ordinate the response of the Council Services and partner agencies.

Where impacts are more widespread, local authorities will establish or maintain their Incident Response Teams for internal co-ordination of their own departmental and corporate response but will also have a representative at multi-agency Silver (tactical) command and, if required at multi agency Gold (Strategic) command to act as the conduit for all local authority communications.

Emergency Services

All emergency services have adverse weather plans which will be adopted as required. The Welsh National Asset Register for operational response to flooding within Wales is held at all Blue Light Control Rooms and LRF's – this allows these Control Rooms to identify local assets and deploy accordingly. For widespread impacts, multi agency response will be through the Tactical Group.

During a flood event, the Police role is to:

- Co-ordinate the actions of all agencies involved during the course of a major flood incident;
- Control the scene at its outer limits by setting up cordon points and setting up a traffic management system in conjunction with the Local Authority;
- Maximise opportunities for saving life with other responders, co-ordinating evacuation and public information.

During a flood event the Fire and Rescue Service in Wales currently responds to widespread flooding, rescues from localised surface water flooding and other inland water rescues.

Within the Welsh Ambulance Service information during a flood will be cascaded internally and liaison with the Met Office and other agencies will take place as appropriate. Warnings will be built into internal systems.

At incidents where emergency services are not coordinating a multi-agency response such coordination will be determined in accordance with local arrangements.



Figure 7: responding to flooding in St Asaph, Denbighshire (Photo courtesy of NRW)

Utilities

Utility companies will assess the likely impact to infrastructure assets based on the flood warnings and flood guidance issued by Natural Resources Wales and considers staff resources required to respond. Utility companies contact responders in the early stages of a flood event, particularly where there are known and developing issues with any key infrastructure.

Dŵr Cymru Welsh Water

Dŵr Cymru Welsh Water respond to all sewage flooding incidents as quickly as possible and generally within 4 hours of being contacted.

Sewers are designed to cope with the vast majority of storms but occasionally rainfall can be so heavy that it overwhelms the system. When this happens, sewage can overflow from manholes and gullies and flood land and gardens.

When such conditions are predicted by the Met Office or NRW, Dŵr Cymru Welsh Water ensures that rainfall data is monitored to identify the areas affected and ensure that additional crews are on standby to respond to any reports of flooding.

During a flood event when sewage has entered a home, integral garage or outbuildings, Dŵr Cymru Welsh Water (DCWW) will assist with the clean up, including the removal of carpets, furniture and other damaged items. Where lawns or gardens are affected, DCWW will assist the clean-up and replace if badly contaminated.

Public Health Wales

Public Health Wales constantly maintains advice and guidance on the public health impacts of flooding. For consistency the guidance aligns with that issued by Public Health England (PHE). The need for specific advice will be dictated by the nature of the event and associated response. Currently PHW guidance includes:

- Health Advice: General information following a flood;
- How to clean up safely following floods;
- Flooding and mental health: essential information for front-line responders;
- General information about mental health following floods;
- Coping without mains water.

The advice can be obtained via the 'Extreme Weather' web-pages of the Public Health Wales [website](#).

Additionally, the document "Extreme Weather Public Health Alerts and Advice for Wales"² published by Public Health Wales in 2015 provides a consolidated source of public health alerts and advice for extreme weather events (including flooding).

Response arrangements

All Category 1 and 2 responders (defined in annex 2) have their own plans in place to respond to flood events. The first indication of a potential incident will usually be via the Flood Forecasting Centre through the issuing of Flood Guidance Statements which provides an assessment of flood risk at a county level for all sources of flooding, for up to 5 days ahead.

² <http://www.wales.nhs.uk/sitesplus/888/page/43886>

This may lead to informal discussions taking place to consider local impacts and arrangements that may be needed to respond if necessary. These arrangements need to be flexible in order to incorporate future developments as more information becomes available.

The issuing of Flood Guidance Statements, Flood Alerts and Flood Warnings, individually or in tandem, will trigger more formal discussions including convening of National and Local Flood Advisory Service teleconferences when there is heightened flood risk (usually but not exclusively when one or more counties in Wales is amber or red on the Flood Guidance Statement).

These discussions will consider whether the predicted impact of the event warrants the activation of a formal response structure as described earlier (figure 4). The formal response should be activated at an early stage on a precautionary basis where there is a risk of serious flooding.

At this point an operational response by relevant responders in the likely affected area will commence. This could include:

- NRW – monitor, forecast, inspect assets, issue Flood Alerts and Warnings, engage with the media
- Local Authority – inspect own assets, communication with communities
- LRF – preparation, contacting officials/staff
- Emergency Services – preparation, asset inspection
- WG – liaising with NRW, local authorities or utilities on the potential impacts, Ministerial reporting, liaison with UK Government when required.

In response to actual flooding, activities by responders are as set out under the responsibilities section above.

Welsh Government will continue to require updates on impacts and further risk from NRW, LRFs, local authorities or collectively via a Silver (tactical) or Gold (strategic) command if set up.

Further information on Emergency Response and Recovery is available on the Cabinet Office website³.

Welsh Government Response

The Resilience Team leads and facilitates the Welsh Government's response to civil emergencies. It fosters and maintains links with emergency planners in local authorities, emergency services and utilities companies as well as other Government Departments, devolved administrations and UK Government in order to co-ordinate responses to emergencies in Wales.

The Flood and Coastal Erosion Risk Management team have responsibility for flood and coastal erosion risk policy in Wales.

³ <https://www.gov.uk/government/publications/emergency-response-and-recovery>

During flood events, and until any setting up of ECCW, the flood team are responsible for:

- ensuring that the Cabinet Secretary for Environment and Rural Affairs and other key departments are briefed and kept updated on the flood risk to communities;
- coordinating Ministerial visits when appropriate;
- advising and providing briefing to Welsh Government media/communication team.

The Resilience Team provide support during a flood incident and assist in the wider coordination between Government Departments.

Welsh Government Transport teams may provide separate briefing on road and rail impacts, as appropriate, and share with Resilience Team and the Flood Team.

Resilience and flood teams receive regular communications from NRW, the Met Office and the Flood Forecasting Centre, including Flood Guidance Statements and National Severe Weather Warnings. If these suggest that flooding is likely to occur, officials liaise with NRW who continue to monitor the situation and make local predictions of river and coastal flooding. Based upon flood incident reports and briefings received from NRW and other organisations, Welsh Government officials will assess the severity of the event and determine their own monitoring or response arrangements.

Welsh Government's Resilience and Flood teams will require frequent situation reports and updates throughout a major or widespread flooding incident so that they can reliably brief Assembly Ministers and UK Cabinet Office when required.

Throughout any flood event, the teams continue to assess the situation based on information provided by NRW, Met Office/Flood Forecasting Centre, local authorities, LRFs and Tactical/Strategic Response when set up. Where necessary, Resilience team may activate the Pan Wales Response Plan.

Emergency Co-ordination Centre (Wales) – (ECCW)

The setting up of one or more SCGs will trigger Level 2 of the Pan-Wales Response Plan (see annex 4) and the Emergency Co-ordination Centre (Wales) will be activated either fully or partially depending on the event.

The role of the Emergency Co-ordination Centre (Wales) (ECC (W)) is to:

- Co-ordinate the gathering and dissemination of information across Wales;
- Ensure an effective flow of communication between local, pan-Wales and UK levels, including the co-ordination of reports to the UK level on the response and recovery effort;
- Brief the Lead Official and Wales Civil Contingencies Committee;
- Ensure that the UK input to response is co-ordinated with the local and pan-Wales efforts;
- Provide media and community relations support through the Strategy and Communication Group;
- Assist in the determination of potential consequences of the emergency and recovery planning;
- Facilitate mutual aid arrangements within Wales and where necessary, between Wales and the border areas of England;

- Raise to a UK level any issues that cannot be resolved at a local or Wales level.

Where an SCG is established, Welsh Government Liaison Officers (WGLO) will be deployed to act as a discrete link between the SCG and ECC(W); keeping the ECC(W) informed of developments without imposing on, or interfering with, the local response effort.

Civil Contingencies Group (CCG) & Wales Civil Contingencies Committee (WCCC)

On occasions, where a potential emergency affecting Wales has been identified, the Welsh Government will convene a meeting of the CCG comprising organisations relevant to the crisis to review and assess the situation and consider the required response in Wales. Where no prior warning is given before an emergency occurring, the ECC(W) will be established and all key organisations informed.

The arrangements for setting up Civil Contingencies Group and Wales Civil Contingencies Committee are outlined in the Pan Wales Response Plan ([Link](#))

Recovery Coordination Group

A Recovery Coordination Group may be established by the SCG after a major or widespread incident to help support the recovery process. Welsh Government Flood team will request information on impacts and damage to flood and coastal infrastructure in order to assist recovery, expedite repairs and seek funding support where appropriate.

Cross Border

If a flood emergency occurs in England but has cross-border implications for Wales the Welsh Government will lead on this aspect in Wales and provide advice and support as necessary to the UK government so that effects can be understood and potential mitigation measures considered.

UK Government

The Central Governments Concept of Operations (CONOPS)⁴ sets out the UK arrangements for responding to and recovering from emergencies, irrespective of cause or location and requiring co-ordinated central government action and provides the operating procedures for COBR.

Flood Rescue in Wales

Wales Inland Flood and Water Rescue Group

The Wales Inland Flood and Water Rescue Group is a body formed to help facilitate and bring together the skills, expertise and abilities which exist in Wales for water rescue. The principle aim of the group is to “develop a sustainable multi agency response capability at operational and tactical levels for inland water and flooding emergencies.

The group was set up 2008 following a series of major flooding in 2007. Its goal is to save life, reduce suffering and help society return to normal. As well as the Blue Light

⁴https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/192425/CONOPs_incl_revised_chapter_24_Apr-13.pdf

Services (Police, FRS and Ambulance Service), the group includes representation from the RNLI, RSPCA, Mountain Rescue, SARA, RSPCA, MCA and the RAF.

Work of the Wales Flood and Water Rescue Group has developed standard operating procedures and improved command and control competence elements of multi-agency response to flooding through multi agency training.

Welsh National Asset Register

Hosted by Mid and West Wales Fire and Rescue Service, the asset register supports management deployment of the nearest available equipped teams including; water rescue powerboat operators, water rescue technicians, water first responders and water incident managers.

Responses to minor or localised flooding events

Rescue responses to minor or localised flood events will be managed at a local level by emergency services. The decision to deploy specialist flood rescue teams rests with emergency service organisations and it is their responsibility to ensure that any teams deployed are competent.

The Welsh National Asset Register can provide assurance that the teams to be deployed have been provisionally assessed as competent to work in the flood environment.

The development and introduction of Strategic Coordination Centres (SCC) across Wales will enhance the ability of the emergency responders to share key information such as the Asset Register.



Figure 8: Responding to flooding in Mold, Flintshire (Photo courtesy of NRW)

Flood Rescue - Responses to major or wide area flooding events

For the purpose of flood rescue, a major or wide area event may be defined as any flood event requiring mutual aid for specialist flood rescue teams from outside the LRF area, or

an event requiring extensive flood rescue operations simultaneously impacting more than one LRF area.

Whilst flash flooding can occur with little warning, in many circumstances early warnings of a major flood event will enable the establishment of robust command and control frameworks before the event impacts the local area. This early warning can also be used to provide an opportunity for specialist mutual aid teams to be requested early and pre-deployed to the area. Effective use of early warning has a number of significant operational advantages, reducing risk for communities and responders alike.

PREPARING/PLANNING FOR FLOODING

Emergency Planning

Emergency planning at national level

Emergency planning and response is a key area for managing flood risk and is identified as such within the National Strategy for Flood and Coastal Erosion Risk Management in Wales⁵. This is in line with the current direction in other parts of the United Kingdom and Europe.

Flood planning at local level

The Civil Contingencies Act 2004⁶ requires Category 1 responders to maintain plans to respond to emergencies. These should draw on risk assessments and should have regard for the arrangements to warn, inform and advise the public at the time of an emergency.

Category 1 responders must also ensure and maintain:

- a procedure for plan activation;
- provision for training key staff;
- provision for exercising the plan to ensure it is effective; and
- procedures in place to ensure that the plan is reviewed periodically and kept up to date.

Preparation of plans should involve Category 1 and Category 2 responders (as defined in annex 2) alongside organisations which are not subject to the Act's requirements as appropriate. Category 1 responders are required to have regard to the activities of relevant voluntary organisations when developing plans. Category 1 responders also have a statutory duty to publish their emergency plans, to the extent necessary or desirable for the purpose of dealing with an emergency.

Emergency Planning in Wales

As with all emergencies, co-operation between organisations is fundamental to flood planning and response. A large number of organisations need to co-operate when responding to flooding, therefore it is critical that organisations work closely in preparing and planning. In most cases, the response to flood emergencies will be conducted at the local level by local responders.

Plans

Community Flood Plans

These plans are developed by communities at risk of flooding with help and support from Natural Resources Wales and local authorities to ensure they can prepare for, respond to and recover from flooding incidents. One or more volunteers from the community will work at a local level to ensure their community is aware of the flood risk, can access relevant advice and support and know what to do when a flood occurs, noting that each community and its local flood risk is different, so these arrangements will vary across Wales.

⁵<http://gov.wales/topics/environmentcountryside/epq/flooding/nationalstrategy/strategy/?lang=en>

⁶http://www.legislation.gov.uk/ukpga/2004/36/pdfs/ukpga_20040036_en.pdf

Local Authority Response Plans

Local Authorities, as Category 1 responders, have a statutory duty under the Civil Contingencies Act to have plans in place which tie in other agencies and detail how they respond to flood events.

LRF Multi Agency Flood Plan

Local Resilience Fora (LRF) have plans in place for larger scale floods which would be used with a possible Gold (Strategic), Silver (tactical) and Bronze (Operational) Structure put in place. Further information can be found in figure 4.

Pan Wales Response Plan

Where an event is significant enough or covering a wide-area, usually more than one LRF area and requiring the ECC(W) to be established, the Pan-Wales Response Plan sets out national co-ordination arrangements. The response will still be led at the LRF level, however the Pan Wales Response Plan provides co-ordination and support arrangements. The decision to activate the Pan Wales Response Plan will be taken by Welsh Government in conjunction with UK Government and Category 1 + 2 responders.

Wales Flood Response Framework

The Wales Flood Response Framework is the overarching framework under which all of these plans sit. The framework brings together the advice, guidance and key policies on flood response which exist at the local, regional and national levels in Wales

Local Flood Risk Management Strategies

Whilst not emergency plans, all local authorities have flood strategies that set out common flood issues and may be of particular use for surface water (pluvial) flood risk and risk from ordinary watercourses (smaller streams).

Flood Risk Management Plans

Flood Risk Management Plans (FRMPs) have been developed to manage the risk of flooding from all sources. They set-out how Risk Management Authorities will, on a 6 yearly cycle, manage flooding so that the communities most at risk benefit the most. In doing so, FRMPs also take forward the objectives and actions set out in the National and Local Flood Risk Management Strategies.

Responsibilities in preparing for flood emergencies

Wales Flood Group

The Wales Flood Group (see annex 1 for membership) provides a forum for representatives from Welsh Government, Local Resilience Fora and category 1 and 2 responders to consider flood resilience issues in Wales. The group will support the development and implementation of work to improve Wales' resilience to flooding.

Local Resilience Fora

LRFs in Wales provide an umbrella structure of Category 1 and Category 2 responders, as defined within the Civil Contingencies Act, to plan and prepare for incidents and emergencies with the potential to affect large numbers of people and/or significantly impact the environment in Wales.

Severe Weather Groups have been established within the LRF structure. These Groups consider planning and preparation for weather related incidents including flooding. These multi-agency supported groups develop guidance and frameworks around which local and national flood risk is communicated, prioritised and response planned for. A number of documents are managed by the Severe Weather Groups on behalf of the LRFs. These form the basis of training and exercising plans to test the LRF's response to flooding incidents, and dovetail into other multi agency response plans managed by the LRF. All documentation is maintained and accessible through Resilience Direct.

Welsh Government – Flood and Coastal Erosion Risk Management Team

Raising awareness of flood risk and ensuring Wales is prepared to respond to a flood event are two of the four overarching objectives set out within the National Strategy for Flood and Coastal Erosion Risk Management in Wales. Welsh Government is responsible for setting policy in relation to flood and coastal erosion risk management and work closely with risk management agencies to provide support and funding for this work.

Welsh Government is the main funder for flood and coastal erosion risk management initiatives delivered by NRW and the local authorities. Between 2010 and 2015, the Welsh Government has invested over £280 million in flood and coastal risk management.

Welsh Government – Resilience

The Welsh Government Resilience Team leads and facilitates the Welsh Government's response to all civil emergencies. To maintain the Welsh Government's co-ordination role the Team facilitates the Wales Resilience Forum and the Wales Resilience Partnership Team. It also manages various pan-Wales sub-groups dedicated to developing resilience in Wales.

Met Office

The Met Office is the official source of meteorological information for emergency planners and responders in the UK. With a resilient 24/7 capability it provides a number of services that help authorities prepare for, and respond to, flood emergencies, primarily the National Severe Weather Warning Service (NSWWS).

The Met Office can provide briefings on the meteorological situation to Welsh Government as required with Civil Contingencies Advisors, based in Cardiff, available to work with the emergency planning community to:

- Discuss predicted or ongoing severe weather events to help emergency responders assess the risk in their particular area and put preparations in place to mitigate the impacts;
- Ensure emergency management teams are aware of all other meteorological factors which could affect the incident and their potential impact;
- Source other scientific advice available from the Met Office and act as a point of contact between the Met Office and the responders, thereby freeing up the responders' resources and allowing them to focus on incident management; and
- If required and appropriate, arrange for routine forecasts and other information to be supplied to aid the recovery phase;
- Assist in the planning and delivery of exercises to test severe weather plans.

The Met Office also provides Hazard Manager, which is a free-at-point-of-use service, designed mainly for Category 1 and 2 responders to warn and inform of weather events and aid the work of incident management teams in dealing with a variety of environmental emergencies, including flooding. The service is designed to supplement the role of the Met Office Advisors (Civil Contingencies) in providing consistent weather related information and guidance for the UK Emergency Response community.

National Severe Weather Warning Service (Met Office)

The National Severe Weather Warning Service, provided by the Met Office warns the public and emergency responders of severe or hazardous weather which has the potential to cause danger to life or widespread disruption through our National Severe Weather Warning Service. They issue warnings for rain, snow, wind, fog and ice. (see annex 4, figure 7).

Flood Forecasting Centre

The Flood Forecasting Centre (FFC) is a partnership between the Environment Agency and the Met Office to forecast river, surface water, coastal and groundwater flood risk at county/unitary authority level across England and Wales. The FFC provides the Flood Guidance Statement (see annex 4) to government and emergency responders across England and Wales to assist in the response to forecast flood impacts.

Natural Resources Wales works closely with the FFC and contributes to the Flood Guidance Statement including agreeing the flood risk status for Welsh counties for the next 5 days.

The FFC provides the hydro-meteorological guidance, intelligence and support to the flood forecasting and warning service provided by Natural Resources Wales. The FFC's products and services give Category 1 and 2 responders more time to plan, prepare and respond to flooding for up to five days ahead. This lead time helps give people in flood risk areas more time to reduce the risk to themselves and their property.

National and Local Flood Advisory Services

In the event of the Flood Forecasting Centre's Flood Guidance Statement indicating a medium to high risk of flooding a range of integrated Flood Advisory Services are triggered across all levels of response.

At a national level, the Flood Forecasting Centre will assess and if appropriate trigger a National Flood Advisory Service (NFAS) teleconference. This allows for Flood Forecasting Centre, NRW and the Met Office to share information with Welsh and the UK Governments at an early stage and discuss any strategic issues, based upon, and prompted by, forecasts in the Flood Guidance Statements and additional local forecast information from NRW. NFAS telecons are convened as follows:

- on a **precautionary** basis to provide clarity where flooding is possible and political and media interest is high, and multiple locations are yellow on the FGS. It is **discretionary** whether contacts attend.
- on a **formal** basis where the situation is indicating that significant flooding is likely and that escalation is required, and it is expected that multiple locations will be yellow, amber or above on the FGS. It is **mandatory** that contacts attend.

At a LRF level, NRW duty officers convene and chair a Local Flood Advisory Service telecom (or meeting depending on the circumstances) to discuss the flood risk for affected counties of Wales using national and local forecast information. These telecons are general called when the Flood Guidance Statement risk level is red and discretionary when amber. The telecons will comprise members of the Local Resilience Fora including local authorities.

Natural Resources Wales - Flood Monitoring & Forecasting

NRW operate a flood warning service, to help the public and emergency responders take timely and effective action to reduce the impact of flooding.

To support this and its own operational response, NRW undertakes real time monitoring of rainfall, river levels, sea levels and wave conditions and makes forecasts of river and coastal flooding at a community scale using local forecasting models. NRW also works closely with the Flood Forecasting Centre on a daily basis to agree the flood risk status in the Flood Guidance Statement. Monitoring and forecasting is done 24/7 365 days per year by NRW duty officers because it provides the basis of escalation and response to flooding by NRW and other responders in Wales. The real time observations and forecasts are used by local Natural Resources Wales duty officers to make decisions on the issuing of flood warnings to professional partners, the media and the general public.

Natural Resources Wales - River and Sea levels on the internet

Natural Resources Wales provide web based information obtained from their network of monitoring stations across Wales on river and sea levels so people living in flood risk areas are better informed and can decide what actions to take as the water levels change.

Natural Resources Wales - Warning & Informing

NRW publishes a public flood risk forecast for up to three days ahead on their website, for all sources of flood risk. This is a public facing version of the Flood Guidance Statement issued to Category 1 and 2 responders. The flood risk forecasts are at a county scale and use the latest hydro-meteorological forecasts from the Flood Forecasting Centre along with local river and coastal flood forecasts provided by NRW.

NRW operate Floodline Warnings Direct, a free service that provides flood warnings direct to the public and responding organisations by telephone, mobile, email, SMS text message, pager and fax.

The service currently covers locations in Wales at high risk from river or coastal flooding. NRW are able to provide direct warning messages in the designated areas, using the following codes:

- Flood Alert;
- Flood Warning; and
- Severe Flood Warning.

Flood Alerts are generally issued for river catchments or stretches of coastline, whereas Flood Warnings and Severe Flood Warnings are issued for specific communities at risk of flooding.

The Flood Warning Service is automatically updated every 15 minutes, 24 hours a day, 7 days a week.

Information is also provided on the NRW website and on their “Flood Alerts Wales” mobile app. Information about current flood risk is also available through **Floodline** service by calling 0345 988 1188.

Both the 3 day flood risk forecast and the Flood Warning Service showing current flood warnings for Wales are accessed through the Natural Resources Wales website.

Local Authorities

Local Authorities have local arrangements in place for responding to small scale and local flood events and are generally the lead responders in relation to local events. They will work alongside the LRFs in multi agency planning for severe weather emergencies at the local level and for triggering multi-agency arrangements in response to severe weather warnings and local impact assessments. In some cases this lead could be NRW or emergency responders. Local authorities liaise, plan and exercise alongside their multi agency partners to ensure all are as best prepared to respond to flooding should it materialise.

Local Authorities will also warn and inform the public to enable them to prepare for severe weather as well as other incidents that may affect them.



Figure 9: Flooding at Tal y Bont, Ceredigion, June 2012 (Photo from NRW)

Dŵr Cymru Welsh Water

Dŵr Cymru Welsh Water prioritises investment for potential flood alleviation schemes depending on the severity and frequency of flooding. Sewers are designed to cope with the vast majority of storms but occasionally rainfall can be so heavy that it overwhelms

the system. When this happens, sewage can overflow from manholes and gullies and flood land and gardens.

When such conditions are predicted by the Met Office or NRW, Dŵr Cymru Welsh Water ensures that rainfall data is monitored to identify the areas affected and ensure that additional crews are on standby to respond to any reports of flooding.



Figure 10: Potential impacts on utility services from flooding. Flooding at Penybont Water Treatment Works (near Tywyn) (Photo courtesy of DCWW)

Public Health Wales

Public Health Wales is a Category 1 responder under Civil Contingencies Act 2004. PHW provides a pan-Wales capability which can be called upon during a flooding incident or extreme weather event.

Information on Public Health Wales response to incidents including flooding may be accessed via their [website](#)

Local Health Boards are responsible for local preparedness and resilience of their estate and operations.

Useful Tools for Responders and the Public

Responders have developed a number of different tools for their own use and for the public in preparing for and dealing with flood events. These include Flood Guidance Statements produced by the Flood Forecasting Centre, National Severe Weather Warnings and Hazard Manager, provided by the Met Office and flood mapping, warning and informing services provided by NRW. More details and examples can be found in Annex 4.

COMMUNICATIONS AND REPORTING

Communication during flood events both within and between organisation and with the public is vital to assist in the response and to reduce the impacts. The Civil Contingencies Act 2004 places a duty on all Category 1 responders to communicate with the public based on the belief that a well-informed public is better able to respond to an emergency and to minimise the impact of the emergency on the community. This involves advising the public of risks before an emergency, and warning and keeping them informed during an emergency. The Emergency Preparedness document⁷ provides guidance on the Civil Contingencies Act, including communicating with the public.

The Wales Warning & Informing Group provides a forum for the communications leads from various responder agencies & the Welsh Government to consider communications issues, share best practice and develop a consistent approach to warning & informing. The Group have developed a Pan Wales Major Incident Communications Framework, a document for emergency responders which sets out steps that will ensure a coordinated multi-agency response in terms of warning and informing in response to major incidents.

Public communications and warnings

The three day Flood Guidance Statement is available to the public through the NRW website⁸

Prior to any potential flood event the public can receive flood alerts and warnings from NRW through Floodline Warnings Direct⁹ which, once registered, will send a message via phone, email, fax text or NRW mobile app. The public can also receive National Severe Weather Warnings via the Met Office website, NRW mobile app and broadcast media. The Floodline number is also advertised via broadcast media and the public can contact Floodline on 0345 988 1188 for further information, including whether they are at risk, signing up for the NRW flood warning service or for general advice and information on how to prepare and deal with flooding. The public can also obtain information via the NRW website on what to do during and after a flood event¹⁰.

Communicating during an event

Communications prior to any flood event will begin with messages from the Met Office and Flood Forecasting Centre, often through the National Flood Advisory Service (NFAS).

All the LRFs have multi-agency warning & informing plans and trigger arrangements which will be brought into play when a major incident occurs. Generally a multi-agency communications cell is established to link all messages together.

⁷ <https://www.gov.uk/guidance/preparation-and-planning-for-emergencies-responsibilities-of-responder-agencies-and-others>

⁸ <http://naturalresources.wales/flooding/check-flood-warnings/?lang=en>

⁹ <http://naturalresources.wales/flooding/flood-warning-service/?lang=en>

¹⁰ <http://naturalresources.wales/flooding/what-to-do-during-and-after-a-flood/?lang=en>

NRW leads on warning & informing for flood incidents and have well rehearsed communication plans in place to deal with these events both before and during an event.

Reporting to Welsh Government

Within Wales, the Welsh Government has overall responsibility for all matters relating to flooding and coastal erosion.

Welsh Government and Welsh Ministers need to be made aware of flooding to properties (residential and commercial) and major infrastructure as well as the response/mitigation underway so that the information can be acted upon quickly.

This would include flooding from any source and should be communicated by whatever response group is set up as well as through NRW Situation Reports and directly through Local Authority reporting. Flooding from multiple sources may be collated beforehand into a single agreed response or Common Operational Picture.

Where the flooding is localised and being managed by a single authority then information on the situation and known impacts should be provided to Welsh Government. This includes reporting from LRFs, NRW, local authorities, Fire and Rescue Service and/or utility companies.

Where ECC(W) is established, Category 1 and 2 responders should report flooding incidents through ECC(W) when it is in operation or, if not, directly to the Welsh Government Flood and Resilience Teams. The relevant mailbox addresses are provided to all Risk Management Authorities.

The public can report flooding incidents via local authorities or NRW by ringing Floodline.

Local authorities have a duty under section 19 of the Flood and Water Management Act 2010 to investigate flooding affecting their area. These reports should be published and Welsh Government Flood Branch informed upon completion.

ANNEXES

Annex 1: Membership of Wales Flood Group

Core Membership includes:

Welsh Government

- Flood and Coastal Erosion Risk Management Team (Chair and secretariat of Group)
- Resilience Branch

Local Resilience Forum

- LRF Flood/Severe Weather Group chairs
- LRF Coordinators

Operating Authorities

- Welsh Local Government Association
- Dŵr Cymru Welsh Water
- Local Authority Emergency Planners
- Natural Resources Wales
- Met Office
- Public Health Wales

Emergency Services

- Fire and Rescue Service
- Police or Joint Emergency Services Group (JESG) Representative

Other agencies and organisations may be invited on an ad hoc basis dependent on the subjects of discussion

Annex 2: Category 1 and 2 responders

Category 1 responders:

- Police Forces
- British Transport Police
- Fire Authorities
- Welsh Ambulance Service NHS Trust
- Local Authorities
- Port Health Authorities
- Health Boards
- Public Health Wales
- Natural Resources Wales

Category 2 responders:

- Electricity distributors and transmitters
- Train Operating Companies
- Airport Operators
- Harbour Authorities
- Water and Sewerage Undertakers
- Network Rail
- Gas distributors,
- Telephone Service Providers
- Trunk Road Agent

Annex 3: Strategic intentions of Strategic Coordinating Groups (SCG)

Protect Life	
Water Rescue	<p>As required:</p> <ul style="list-style-type: none"> • Fire and Rescue Service co-ordinate water rescue assets not only from its own area but from across the UK. • Search and rescue services can also be provided from the voluntary sector but these will need to be coordinated by the SCG. • Deployment of a Search and Rescue Liaison Officer (SARLO) to co-ordinate the services of 3 RAF Helicopters. • May mobilise Mountain Rescue Teams to provide communications. • Maritime and Coastguard Agency may provide search and rescue helicopters and resources to assist operations.
Vulnerable People	<ul style="list-style-type: none"> • Where required, the local authorities will co-ordinate information gathering on known vulnerable people in the affected area and will: <ul style="list-style-type: none"> ○ be responsible for liaising with the media cell to put in place arrangements through the media for members of the public to report vulnerable people and their location to the authorities, ○ identify buildings in the affected area which hold large numbers of vulnerable people such as hospitals/care homes. • Assessments on the ground of vulnerable people by the responder agencies will also be needed in gathering information for Silver and SCG. • The voluntary sector needs to be engaged in this work where appropriate to provide assistance where it is needed.
Evacuation	<ul style="list-style-type: none"> • Evacuation will be used as a last resort option by SCG. • The SCG Chair will ultimately make the decision to evacuate but this will be done so in consultation and with the agreement of the partner agencies. • Evacuation plans used by SCG will vary between the LRF areas in Wales but will involve the engagement of transport operators, receiving hospitals and care homes and the setting up of Rest Centres. In many cases, there will be a requirement to engage with neighbouring local authorities to support the operation. • There are no powers for mandatory evacuation.
Safeguard Public Health	
Food and Water	<ul style="list-style-type: none"> • Water companies in Wales have a statutory duty to provide a minimum of 10 litres a day drinking water for each person in the affected area. • If the interruption of mains water exceeds 5 days following the declaration of a major incident then this increases to 20 litres per person per day. • Water companies have their own plans to provide the water but will need to operate these plans with the full co-operation of the SCG. It is therefore essential that the relevant water companies form an integral part of SCG
Public Health Advice	<ul style="list-style-type: none"> • The Public Health Wales Trust consultant will provide the relevant health advice to the Strategic Co-ordinating Group (SCG) on the consequences and required actions to be taken in light of the flooding incident. They will agree with the SCG, clear public health messages to be given to the public, media, incident responders and health care professionals. They will also arrange to establish a Health Emergency Control Centre (HECC) when needed to provide advice to the public
Scientific and Technical Advice	<ul style="list-style-type: none"> • In Wales, Strategic Co-ordinating Groups (SCGs) have Scientific and Technical Advice Cell (STAC) arrangements. Where the requirement for such advice is wider than the expertise available, the Welsh Government may be asked to identify other sources of scientific advice from across Wales or further afield to support the local

	<p>response. If necessary, the Welsh Government will seek support from the UK Government via Cabinet Office.</p> <ul style="list-style-type: none"> • Where scientific and technical advice is required by more than one SCG in Wales, a single Wales STAC working under the direction of the SCG or SCGs, may be established • If the Welsh Government needs additional scientific and technical advice it may also ask COBR to activate and co-ordinate SAGE (the Scientific Advisory Group on Emergencies) in order that UK scientific and technical advice is available to the Welsh Government's consequence management and, through that process, is also available to inform the Strategic Co-ordinating Groups. • Where scientific and technical advice is required by an SCG and no local expertise can be found Welsh Government would ask the Office of the Chief Scientific Adviser to liaise with the Government Office for Science to find an appropriate adviser. Where COBR is also established the request would be routed through them
3: Reassure the public	
Media	<ul style="list-style-type: none"> • Police will lead with media handling at SCG supported by all agencies. • It is the responsibility of SCG to ensure consistent media messages and public advice. Agreed lines must be shared with Silver and Bronze levels • A multi-agency media cell will be established within the SCC to co-ordinate media handling across agencies. The media cell will engage with the Emergency Co-ordination Centre (Wales) media cell to co-ordinate media handling at Wales and UK levels.
4: Preserve essential Critical National Infrastructure	
CNI	<ul style="list-style-type: none"> • The involvement of utility companies in SCG is vital to identify the potential threat to their assets in the affected area and the consequences to the critical national infrastructure of these assets. • SCG commanders will need to know urgently about all CNI assets and what actions will be required to protect them.
5: Facilitate Recovery	
	<p>The SCG will establish a Recovery Co-ordinating Group under the lead of the most affected local authority as soon as possible. Recovery Co-ordinating Group will:</p> <ul style="list-style-type: none"> • be responsible for assessing the impact of the flood, including on homes, business, economy, welfare and infrastructure and plan from an early stage the return to the 'new normality'. • involve utility companies to consider their approach to recovering essential services. • involve road and rail operators to help restore the transport infrastructure where this is needed. • should include a representative from the Association of British Insurers (ABI) to help facilitate the work of insurance companies in the recovery phase.

Annex 4: Useful Tools for responders

A number of tools have been developed for use by responders and the public in planning and preparing for flood events including:

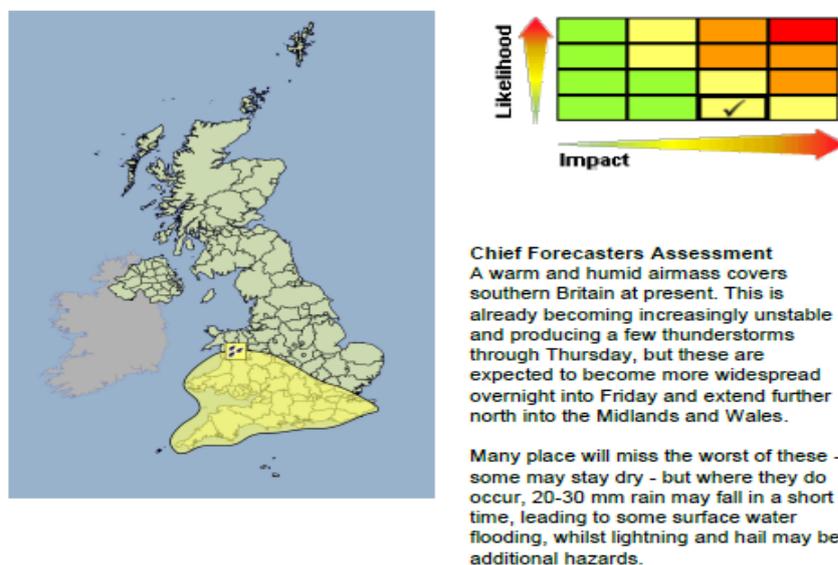
- Flood Guidance statement produced by the Flood Forecasting Centre for responders (public version available from NRW website).
- National Severe Weather Warnings (available to the public and responders) and Hazard Manager (available to responders), provided by the Met Office.
- Flood warning and informing services, provided by Natural Resources Wales (including flood risk maps, 3 day flood risk forecast, Floodline and open data).

National Severe Weather Warnings

The National Severe Weather Warning Service¹¹ is issued by the Met Office to provide warnings to the public and emergency responders of severe or hazardous weather which could cause widespread disruption. Warnings are issued for rain, snow, wind, fog and ice and are given a colour depending on a combination of the likelihood of the event happening and the impact which may have. Whilst this does not specifically warn against flooding, it includes rain and wind which could result in flooding. Further details on the Met Office Warnings can be found on their website through the training video: <http://www.metoffice.gov.uk/publicsector/hazardmanager/help-centre>



National Severe Weather Warning Service



The Met Office have issued a Yellow Warning of Rain

Valid from 00:15 on Fri, 19th Sep 2014 until 23:45 on Fri, 19th Sep 2014

Heavy showers and thunderstorms are likely to spread from the south across some southern and western parts of England, and also Wales, on Thursday night - the risk then continuing through much of Friday. Many places will miss these but the public should be aware of the potential for isolated disruption due to surface water flooding, lightning strikes and hail.

Figure 11: Warnings issued by National Severe Weather Warning Service

¹¹<http://www.metoffice.gov.uk/public/weather/warnings/#?tab=warnings&map=Warnings&zoom=5&lon=-3.50&lat=55.50&fcTime=1468450800>

Hazard Manager

The Met Office provides a range of services through Hazard Manager, available to category 1 and 2 responders, which help them to prepare for and respond to emergency incidents that are caused or influenced by the weather.

Hazard Manager provides a one-stop information source for the emergency responders. It is an interactive web portal using maps which can be overlaid with weather information.

Hazard Manager is designed to supplement the role of the Civil Contingencies Advisors in providing consistent weather-related information and interpretation for the UK Emergency Response community. The Met Office have a team of regionally-based [Civil Contingencies Advisors](#) who can be called upon to provide advice at a strategic command and control centre level

Emergency responders can register for Hazard Manager through the Met Office website

Flood Guidance Statement

The Flood Forecasting Centre provides the Flood Guidance Statement (FGS) to the government and Category 1 and 2 responders in England and Wales to assist in planning and preparing for flooding.

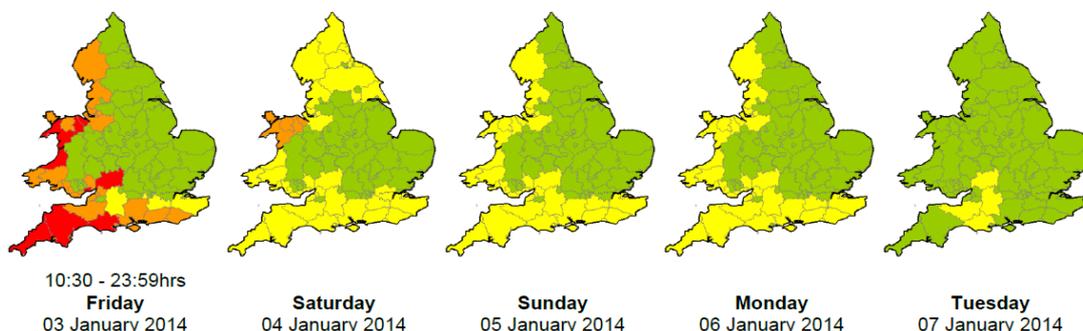
The Flood Guidance Statement is a daily assessment of flood risk to assist Category 1 and 2 emergency responders with their planning and resourcing decisions. The FGS presents a five day overview of flood risk from river, surface water, coastal or groundwater at county/unitary authority scale in England and Wales.

FLOODFORECASTINGCENTRE

a working partnership between  Environment Agency  MetOffice

Flood Guidance Statement 10:30hrs Friday 03 January 2014

Our assessment of daily flood risk for England and Wales, working with flood forecasting teams in the Environment Agency and Natural Resources Wales, is below.



There is a HIGH coastal flood risk for today in Devon, Cornwall, Dorset and Gloucestershire, Newport, Flintshire, Denbigshire, Gwynedd and Ceredigion with a high likelihood of severe coastal impacts, and a MEDIUM coastal flood risk in coastal parts of Monmouthshire today, with a low likelihood of severe coastal impacts, and a MEDIUM coastal flood risk in other coastal parts of Wales and south and west England today, this continues into the early hours of tomorrow along the coast of North Wales. There are also other low flood risks at times

Figure 12: Examples of a Flood Guidance Statement produced in January 2014 by Flood Forecasting Centre

Using the collated assessments from local flood forecasting teams in Natural Resources Wales and the Environment Agency, the FGS identifies developing situations that could cause flooding, which threatens communities, lives and livelihoods. The FGS presents the best combined understanding of risk based on weather forecasts, flood forecasts, catchment conditions and the operational status of flood defences.

The FGS is routinely issued by the FFC at 10:30 every day, although it is also issued at anytime of the day and night as the flood risk changes. Emergency responders can register to receive the FGS for the specific risk level and geographical area they need. A user guide helps responders interpret and contextualise the information. To register for the FGS or to find out more information about the FFC visit:

<http://www.fcc-environment-agency.metoffice.gov.uk/>

The public can obtain a three day flood guidance statement via Natural Resources Wales website: <http://naturalresourceswales.gov.uk/alerts/>

The Flood Guidance Statement includes a flood risk matrix showing an assessment of the likelihood of flooding occurring against the potential impacts of that flooding assigning a risk colour and index. This reflects the colouring of the five daily FGS maps for England and Wales.

Further details on the flood guidance statement can be found in the Flood Guidance Statement user guide available from the Flood Forecasting Centre website: <http://www.fcc-environment-agency.metoffice.gov.uk/services/guidance.html>

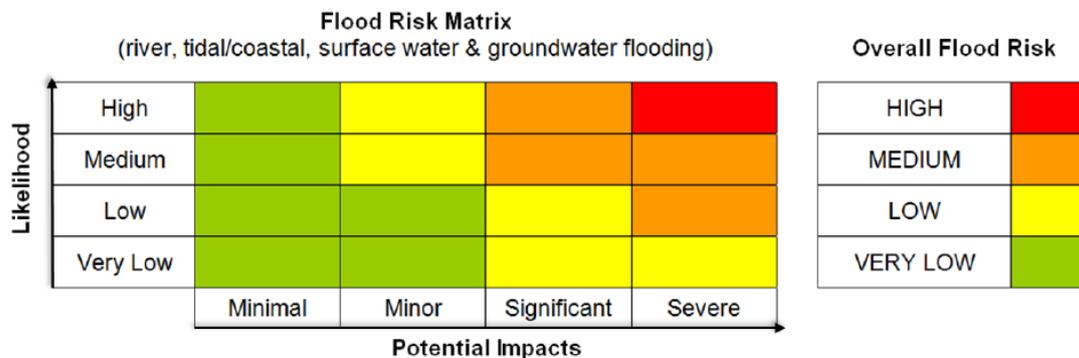


Figure 13: Flood Risk Matrix

The table below shows typical examples of the impacts to be expected from flooding in line with the four columns contained within the flood risk matrix

Flood Impacts Table			
Minimal Impacts	Minor Impacts	Significant Impacts	Severe Impacts
<ul style="list-style-type: none"> • Generally no impact, however there may still be • Isolated and minor flooding of low-lying land and roads • Isolated instances of spray/wave overtopping on coastal promenades • Little or no disruption to travel although wet road surfaces could lead to difficult driving conditions 	<ul style="list-style-type: none"> • Localised flooding of land and roads – risk of aquaplaning • Localised flooding could affect individual properties • Individual properties in coastal locations affected by spray and/or wave overtopping • Localised disruption to key sites identified in flood plans (e.g. railways, utilities) • Local disruption to travel – longer journey times 	<ul style="list-style-type: none"> • Flooding affecting properties and parts of communities • Damage to buildings/structures is possible • Possible danger to life due to fast flowing/deep water/ wave overtopping/ wave inundation • Disruption to key sites identified in flood plans (e.g. railways, utilities, hospitals) • Disruption to travel is expected. A number of roads are likely to be closed 	<ul style="list-style-type: none"> • Widespread flooding affecting significant numbers of properties and whole communities • Collapse of buildings/structures is possible • Danger to life due to fast flowing/ deep water/ wave overtopping/ wave inundation • Widespread disruption or loss of infrastructure identified in flood plans (e.g. railways, utilities, hospitals) • Large scale evacuation of properties may be required • Severe disruption to travel. Risk of motorists becoming stranded

Figure 14: Impacts from flooding as indicated on the Flood Risk Matrix

Natural Resources Wales - Flood Warning Codes

	Key Message	Timing	Actions	Channels
Online 5 day flood forecast	Be aware Keep an eye on the weather situation	Usually updated 10.30am each day – more frequently when risk is medium or high	<ul style="list-style-type: none"> • Check weather conditions. • Check for updated flood forecasts on NRW website 	<ul style="list-style-type: none"> • Internet • Media
 <p>FLOOD ALERT</p>	Flooding is possible Be prepared	Two hours to two days in advance	<ul style="list-style-type: none"> • Review information provided on NRW website and Floodline. • Be prepared for flooding • Prepare a flood kit of essential items • Monitor water levels and the flood forecast on NRW website 	<ul style="list-style-type: none"> • NRW Warning Service • Floodline • Internet
 <p>FLOOD WARNING</p>	Flooding is expected Immediate action is required	Half an hour to one day in advance of flooding	<ul style="list-style-type: none"> • Review info provided on NRW website and Floodline. • Responders will liaise with NRW for flood predictions • Move family, pets and valuables to a safe place • Turn off gas, electricity and water supplies if safe to do so • Consider putting flood protection equipment in place 	<ul style="list-style-type: none"> • NRW Flood Warning Service • Floodline • Internet • Media
 <p>SEVERE FLOOD WARNING</p>	Severe flooding Danger to life	When flooding is expected to be widespread or pose a significant threat to life and different actions are required. Lead time is likely to be minimal and could also be issued after onset of flooding	<ul style="list-style-type: none"> • Review info provided on NRW website and Floodline. • Responders will liaise with NRW for flood predictions • Stay in a safe place with a means of escape • Be ready should you need to evacuate from your home • Co-operate with the emergency services • Call 999 if you are in immediate danger 	<ul style="list-style-type: none"> • NRW Flood Warning Service • Floodline • Internet • Media
	No further flooding is currently expected for your area	Issued when a severe flood warning/flood warning/alert is no longer in force	<ul style="list-style-type: none"> • Flood water may still be around and could be contaminated • If you've been flooded, ring your buildings and contents insurance company as soon as possible 	<ul style="list-style-type: none"> • Floodline Warnings Direct • Floodline • Internet

Figure 15: Key messages and actions for responders and the public associated with the NRW flood alert/warnings

Floodline Warnings Direct: This is the system within which the warnings are processed, where customers can register for warnings and where areas of service are delineated. Floodline Warnings Direct provides a free service that sends direct messages when flooding which may affect a property is expected to give time to prepare. This message can be sent via telephone, mobile, email, text message, or via the NRW mobile app. Details for registration can be found by calling Floodline Warnings Direct on 0345 988 1188 or on the NRW website:

<https://www.naturalresources.wales/flooding/flood-warning-service/>

Floodline is the communications portal for people wanting to manually register for warnings and to find out further information about warnings in place. This is a central telephone service where enquirers can be “put through” to local offices.

Natural Resources Wales - Messages & Scales

Figure 12 below shows the scale at which flood warnings are issued

STAGES	Awareness raising stage	Flood Alert 	Flood Warning 	Severe Warning 	Flood 	Warning no longer in force stage
SCALE	County 	Catchment 	Community 	Community 	Community / Catchment 	
MESSAGES	<ul style="list-style-type: none"> • Five Day Flood Risk Forecast is available via the NRW website. 	<ul style="list-style-type: none"> • Flood Alert Issue • Update Floodline & Internet 	<ul style="list-style-type: none"> • Flood Warning Issue • Update Floodline & Internet • Update Flood Warning 	<ul style="list-style-type: none"> • Severe Flood Warning Issue • Update Floodline & Internet 	<ul style="list-style-type: none"> • Remove Severe Flood Warning • Remove Flood Warning • Remove Flood Alert (issued to Responders only) 	
SYSTEM	NRW Website	Floodline Warnings Direct	Floodline Warnings Direct	Floodline Warnings Direct	Floodline Warnings Direct	Floodline Warnings Direct

Figure 16: Flood warning system

Natural Resources Wales - Flood Risk Maps

NRW provide online flood risk maps which are available for the public to view showing risk from main rivers, ordinary watercourses, surface water, reservoirs and the sea.

These maps can be used for awareness raising activities to ensure that those are risk are aware of the risk and are prepared to respond as necessary.

The maps can be found on the Natural Resources Wales website:

<https://naturalresources.wales/our-evidence-and-reports/maps/flood-risk-map/>

Natural Resources Wales - River and Sea levels on the internet

NRW provide web based information obtained from their network of monitoring stations across Wales on river and sea levels so people living in flood risk areas are better informed and can decide what actions to take as the water levels change.

This data is accessed through the NRW website.
Visit: <http://naturalresourceswales.gov.uk/alerts/>

Annex 5: Glossary of terms

Bronze (Command)	The operational level of command and control (below Silver and Gold level) managing the response to an event at the incident site(s) or associated areas.
Category 1 responder	Person or body listed in part 1 of schedule to the civil contingencies act, normally at the core of the response to an emergency. See also responder.
Category 2 responder	Person or body listed in part 3 of schedule 1 to the civil contingencies act, less likely to be at the core of the response to an emergency, but co-operating with Category 1 Responders. See also responder
Civil Contingency planning	Civil protection provisions made for the preparation and planning of a response to and recovery from emergencies as defined in the civil Contingencies Act 2004 and Contingency Planning Regulations (2005).
Civil Contingencies	Risks to civilian health, safety, and property from emergencies as defined in the Civil Contingencies Act (2004).
Civil Contingencies Act (2004)	Act of 2004 which established a single framework for Civil Protection in the United Kingdom. Part 1 of the Act establishes a clear set of roles and responsibilities for Local Responders; Part 2 of the Act establishes emergency powers.
Common Recognised Information Picture	A single, authoritative strategic overview of an emergency, developed according to a standard template. Within COBR the CRIP is typically collated and maintained by the Central Situation Cell and circulated where relevant to responders.
Contingency	Possible future emergency or risk which must be prepared for. See also civil contingencies.
Co-ordination	The integration of multi-agency efforts and available capabilities, which may be interdependent, in order to achieve defined objectives.
Emergency	An event or situation which threatens serious damage to human welfare in a place in the UK, the environment of a place in the UK, or the security of the UK or of a place in the UK.
Emergency Coordination Centre (Wales)	Welsh Government centre co-ordinating a multi-agency response to an emergency and acting as a link between the local level and the Cabinet Office Briefing Rooms.
Emergency Services	Generic term of police, fire and rescue, health agencies; may also include HM coastguard and other responders.
Exercise	Simulation to validate an emergency plan or business continuity plan, rehearse key staff or test systems and procedures.

Gold (Command)	The strategic level of command and control (above Silver level and Bronze level) at which policy, strategy and the overall response framework are established and managed for individual responder agencies. Note: the Strategic Co-ordinating Group, the multi-agency strategic co-ordinating body, may colloquially be referred to as the Gold Group, but not simply as Gold.
Incident	Event or situation that requires a response from the emergency services or other responders. Note: emergency (or major incident) refers to a specific type of incident requiring special deployment by one or more category 1 responder.
Joint Emergency Services Interoperability Programme (JESIP)	Set up to improve the way the Police, Fire & Rescue and Ambulance services work together when responding to major multi-agency incidents.
Lead Government Department	Department of the United Kingdom government or devolved administration designated as responsible for overall management of the government response to an emergency or disaster.
Local	(By contrast with national or regional) relating to a limited area of immediate vicinity.
Local Resilience Forum	Process for bringing together all the category 1 and 2 responders within a police force area for the purpose of facilitating co-operation in fulfilment of their duties under the Civil Contingencies Act.
Maritime and Coastguard Agency	Executive agency of the department for transport, comprising Her Majesty's Coastguard and the former Marine Safety Agency.
Multi-agency	Involving the participation of several agencies Note: frequently used interchangeably with inter-agency or joint-agency.
National Resilience Extranet	Secure web based infrastructure to enable multi-agency information sharing and which has a specific information function during emergency response and recovery.
Operational	General definition- relating to an emergency service's actions undertaken in response to an incident Specific definition- the level (below tactical level) at which the management of 'hands-on' work is undertaken at the incident site(s) or associated areas, equating for single agencies to Bronze level. Notes: 1 the terms Bronze and operational are frequently used interchangeably. 2 operational and tactical are inverted in military usage.
Preparedness	Process of preparing to deal with known risks and unforeseen events or situations that have the potential to result in an emergency.

Recovery	Process of rebuilding, restoring and rehabilitating the community following an emergency or disaster, continuing until the disruption has been rectified, demands on services have been returned to normal levels, and the needs of those affected have been met.
Rescue	Removal, from a place of danger to a place of relative safety, of persons threatened or directly affected by an incident, emergency, or disaster.
Resilience	Ability of the community, services, area or infrastructure to detect, prevents, and, if necessary to withstand, handle and recover from disruptive challenges.
Responder	Organisation required to plan and prepares a response to an emergency. See category 1 and 2 responder.
Response	Decisions and actions taken in accordance with the strategic, tactical and operational objectives defined by emergency responders. At a high level these will be to protect life, contain and mitigate the impacts of the emergency and create the conditions for a return to normality. See also preparedness and recovery.
Risk	Measure of the significance of a potential emergency in terms of likelihood and impact.
Risk management	All activities and structures directed towards the effective assessment and management of risks and their potential adverse impacts.
Scientific Advisory Group in Emergencies	Group of scientific and technical experts that is established to provide a common source of advice to inform decisions made during the central government response to an emergency.
Science and Technical Advice Cell	Group of technical experts from those agencies involved in an emergency response that may provide scientific and technical advice to the strategic co-ordinating group chair or single service gold commander.
Search and Rescue	Use of specialised personnel and equipment to locate persons in distress or in danger and remove them from a place of actual or potential danger to a place of relative safety.
Sector	An area of responsibility at an incident. These should be created to manage spans of control and provide tighter supervision of operations. Operational sectors are those dealing directly with the incident, and support sectors are usually defined by the function they undertake.
Sector commander	An emergency services officer commanding a sector who is tasked with the responsibility for tactical and safety management of a clearly identified part of an incident.
Silver (Command)	The tactical tier of command and control within a single agency (below Gold level and above Bronze level) at which the response to an emergency is managed. Note: multi-agency co-ordination at the tactical level is undertaken by the Tactical Co-ordinating Group.

Situation Report	Report produced by an officer or body, outlining the current state and potential development of an incident and the response to it.
Specific emergency plan	Plan by one or more category 1 responder(s) that relates to a particular risk not adequately addressed in the generic emergency plan.
Strategic (command/level)	The level (above tactical level and operational level) at which policy, strategy and the overall response framework are established and managed.
Strategic Coordination Centre	The location at which the Strategic Co-ordinating Group meets.
Strategic Coordinating Group (SCG)	Multi-agency body responsible for co-ordinating the joint response to an emergency at the local strategic level. Sometimes referred to as Gold Group
Tactical (command/level)	Multi agency group established by the appropriate Police force to co-ordinate a response to the management of an emergency. This group will ensure that actions taken at an operations level are co-ordinated, coherent and integrated. Sometimes referred to as Silver Group Notes: 1 The terms Tactical and Silver are frequently used interchangeably for single agency operations. 2 Tactical and operational are inverted in military usage.
Tactical coordinating group	A multi-agency group of tactical commanders that meets to determine, co-ordinate and deliver the tactical response to an emergency.
Utility	Company providing an essential community service, especially water, energy, or telecommunications
Voluntary	(Of an agency or activity) non-governmental and not-for-profit, or charitable.
Voluntary Sector	All voluntary organisations, regarded as a group, involved in any aspects of the response to an emergency. Also known as third sector.
Wales Flood Group	A sub group of the Wales Resilience Forum (WRF). The Group contains representatives from the key agencies engaged in flood warning, response and recovery activities across Wales (see membership at Annex 3). A key role of the Group is to capture, support, monitor and communicate the work being delivered by the Welsh Government and our partners involved in flood resilience issues in Wales; many of whom are members of the group to improve emergency planning, and the response to flooding.

Wales Media Emergency Forum	Ad hoc group of senior media editors, government representatives, Emergency Forum local authority emergency planners, emergency services, police and the private sector in Wales set up to consider the provision of information to the public, and other media issues, in the context of civil emergencies.
Wales Civil Contingencies Committee	Multi-agency group, including representatives from the Welsh Government, emergency services, local authorities, and others as Committee applicable, convened as required to co-ordinate multiple strategic co-ordinating groups across Wales, in order to improve the co-ordination of the response to an emergency with a particular focus on consequence management and the recovery phase.
Wales Resilience Forum	The WRF promotes good communication and enhances resilience across agencies and services in Wales. This is done by providing a forum for Chief Officers to discuss with Welsh Ministers strategic issues of emergency preparedness.

Annex 6: Pan Wales Civil Contingencies Committee Levels of Response

