

## **Government Coastal Flooding Response and Recovery Guide: Executive Summary**

### **Purpose**

1. The Government Coastal Flooding Response and Recovery Guide is aimed at central government departments and agencies involved in planning for and responding to any wide area coastal flood. It:
  - provides an overview of the phased central Government response to a wide area coastal flood;
  - describes the trigger points, the strategic framework and the mechanisms to be used to support the national response; and
  - informs the development of operational plans by local organisations and emergency planners.

### **The challenge of a wide area coastal flood**

2. A wide area coastal flood is one of the most significant natural hazards facing the UK and poses some specific challenges. It is most likely to occur between September and April and requires three factors to coincide:
  - a peak natural (or astronomical) high tide;
  - a storm surge caused when a deep depression tracks across our coastal water, low atmospheric pressure and raising wind speeds which push the surface of the sea forward causing the water to bulge; and
  - severe onshore winds which create large waves that add to the risk that water will break or flow over the top of flood defences.

### **The potential impact of a wide area coastal flood**

3. Due to variations in geography, transport links and population density, the risk posed by coastal flooding varies significantly around the UK coast. While many areas could be affected, the area at greatest risk is the low-lying East Coast of England from East Yorkshire to Kent. The 1953 east coast flood resulted in over 600km<sup>2</sup> of land flooded, 307 fatalities and 200 industrial facilities were damaged by floodwater. Over 32,000 people were evacuated.
4. A tidal surge in December 2013 caused a number of breaches and widespread over-topping of defences on the East Coast of England but the wind direction was such that the impact of the surge was reduced because of minimal wave action.



Even so, 2,855 properties (1,968 homes and 917 businesses) were flooded and 18,000 people were evacuated. In January and February 2014 storm conditions involving wave action driven by strong winds also caused significant coastal flooding on the South Coast of England which damaged national rail infrastructure and caused widespread disruption.

## Strategic objectives for the UK government response

5. The objectives of the Government's response to a wide area coastal flood are to:
  - protect life and minimise the impact on the UK;
  - support the continuation of everyday activities and essential services as far as practical, and provide support to disrupted communities;
  - support local responders in delivering their core functions in an emergency;
  - uphold the rule of law and the democratic process;
  - instil and maintain trust and confidence by ensuring that the public and the media are engaged and well informed; and
  - ensure a smooth transition to the recovery phase and the availability of on-going central government support to affected areas.

## Central government arrangements:

6. Whilst coastal flooding can occur at a wide range of severities, the most serious scenarios have the potential to seriously stretch local responders and resources. However, the expectation is that local agencies and emergency management structures will continue to function. During the critical preparedness phase a priority for them will be to ensure effective business continuity arrangements are in place before any flooding occurs. A focus for central government efforts therefore will be to reinforce and support these agencies in performing their duties in accordance with the principles set out in *CONOPS*<sup>1</sup>. The response to emergencies should be grounded in organisations' existing functions with decisions taken at the lowest possible level with local responders as the basic building block. National co-ordination, through COBR, will be activated once the risk of a major coastal flooding event likely to severely affect a number of counties has been identified. As the risk assessment firms up, the response may include steps to increase the supply of critical assets and capabilities and to prioritise their allocation to areas of greatest need.

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<sup>1</sup> Central government Arrangements for Responding to an Emergency  
(<https://www.gov.uk/government/publications/the-central-government-s-concept-of-operations>)



7. In addition to the arrangements set out in the National Flood Framework, when the scale and impacts of an event are exceptional COBR may stand-up an **Operations and Logistics Cell (COLC)** to provide advice to COBR on the availability and deployment of national assets and to operationalise the strategic direction provided by COBR in respect of centrally owned or sourced resources. All requests for assistance from Strategic Coordination Groups (SCGs) will be made via the local Joint Regional Liaison Officer (JRLO) for military support, or via the DCLG Government Liaison Officer (GLO) in England or the relevant Devolved Administration/UK lead government department liaison officer elsewhere.

### Information reporting and situational awareness

8. An early national assessment will be needed as the forecast firms up combining local and national considerations to understand the potential implications for both the local and national response. In practice, this is likely to be compiled in parallel by SCGs in each at risk area drawing on Environment Agency modelling and their own local knowledge of both the potential impact and the resources available to manage the response. This activity will be complemented and supported by a national assessment produced for COBR identifying areas at greatest risk, pinch points, and potential capability gaps. Effective, timely, two-way communications will be essential between central and local government throughout.
9. SCGs will use this evidence to make decisions about how best to protect communities living in affected areas. Where appropriate DCLG, with Defra and Cabinet Office agreement, may convene one or more **Multi-SCG Response Co-ordinating Groups** (ResCGs) to facilitate the sharing of information and mutual support between relevant LRFs. In addition, DCLG will provide Government Liaison Officers to SCGs as and when they meet.

### Coastal flood risk management strategy

10. There are likely to be **five** broad phases in the management of a major coastal flooding event, depending on how the event develops:
  1. Early Warning: over 5 days out, Central Government is likely to be alerted that an exceptional storm is heading towards the UK, but that there is low confidence in its precise track and potential impact.
  2. Assessment phase: c3-5 days out, understanding and confidence in the characteristics of the weather pattern will increase; the first flood guidance statements and severe weather warnings are likely to be issued and Government likely to commission an assessment of demand on resources.



3. Preparedness phase: c3 days to a few hours out, key decisions taken on how best to mitigate the risk including prioritisation and deployment of national assets and local decisions on evacuation and sheltering.
  4. Impact: from a few hours before impact until flood waters have receded and immediate threat to life and community wellbeing has passed. Could last from a few days to several weeks depending on the impact in an area.
  5. Recovery: the process of rebuilding lives and communities affected by the storm and is likely to last years for an event on this scale. Led by DCLG in England.
11. Given its potentially high impact, the timelines involved, and the uncertainty around forecasting, it is likely that many important decisions will need to be based on imperfect information and relatively low levels of certainty. The nature of the risk is also likely to vary across the country so decisions and priorities will often need to reflect local circumstances. Early action is therefore vital and will involve close two-way communication between national and local levels, facilitated by DCLG.

### **Phase 1: Early warning (over 5 days out):**

#### **Forecasting**

12. The Met Office is likely to pick up initial indications of a major storm event approaching the country 5-10 days out. At this stage, the confidence in the likelihood of a wide area coastal flood could be very low with concern largely focused on the impact of high winds (probably over 80mph) and the risk of structural damage and impact on power lines and transport. A major coastal flood event could be excluded at this stage if the storm is unlikely to coincide with a peak astronomical high tide; these tides are known years in advance.

#### **Decision-making**

13. COBR activation is very unlikely this far out, though the Winter Resilience Network (WRN) may be convened bringing together relevant national and local responders (including the devolved administrations) to raise awareness of potential risk posed by approaching storm. A National Flood Advisory telecon is likely to be called involving Met Office, Environment Agency, Defra and Cabinet Office to discuss the likelihood of flooding from the storm threat if it coincides with a high tide and consider escalation to a formal response process.



## Media messaging

14. The Met Office and Environment Agency will co-ordinate storm and flood risk media handling. This far out, the Met Office are likely to take the lead, given the main risk is likely to be assessed as storm damage. The media may pick up on the storm from weather 'experts' outside the Met Office, in which case the Met Office may draw on pre-prepared factual information on storm surges to inform discussion. The Environment Agency will largely play a supporting role, for example with information on coastal flood defences and improvements since 1953.

### **Phase 2: Assessment phase (c3-5 days out):**

#### Forecasting

15. From 5 days out, our understanding and confidence in the characteristics of the weather pattern will increase and it is likely that warnings will start to appear on Flood Guidance Statements around days 4-5, indicating the possibility of a wide area coastal flood, though the likelihood measure is likely to be very low or low at this point.

#### Decision-making

16. Depending on the risk assessment, Cabinet Office and Defra will agree how best to communicate the risk more widely and whether this is best done through the Winter Resilience Network (if the risk was multi-faceted), and/or a Lead Government Department flood telecon if the main risk is believed to be flooding in England (the Devolved Administrations would initiate their own arrangements as necessary). In addition, the Flood Forecasting Centre may initiate telecons with key responders. Flood Guidance Statements will be available to Government Departments and to all Category 1 and 2 responders alerting them to the risk.

17. If there is a credible risk of severe coastal flooding, it is likely that COBR will be convened, initially at official level, to review the situation, assess the likely timelines and potential consequences, and consider the national response. Actions that may be required include:

- ensuring via DCLG that all relevant LRFs in England are aware of the risk, that SCGs are meeting in order to review the risk, dust off their plans, identify areas of potential vulnerability, and assess timelines for key decisions;
- departments ensuring that sponsored sectors are aware of the risk and taking appropriate steps to review their preparedness, including the identification of



Critical National Infrastructure (CNI) sites at risk in a severe coastal flood event and where extra or pre-emptive mitigation assistance may be needed. Category 2 responders will be expected to attend SCGs;

- gathering of information from local partners on potentially significant capacity and capability shortfalls to establish whether additional central government action is likely to be needed; and
- consideration as to whether arrangements should be put in place to prioritise allocation of national assets and where additional resources might be sourced from and how.

18. This preparatory action, will be crucial in informing decisions during the preparedness phase if the likelihood of a severe coastal flood firms up.

### **Media messaging**

19. The Met Office and increasingly the Environment Agency will play a key part in public messaging, with Defra coordinating as necessary within central Government. Public statements by ministers are unlikely at this stage, except in exceptional circumstances, beyond noting that: they and relevant agencies are monitoring the situation carefully; considering what support might be needed if/as the risk firms up; and advising the public to follow advice from local agencies on sensible precautions they might take. Media interest is likely to be increasing.

### **Phase 3: Preparedness phase (c3 days to a few hours out):**

#### **Forecasting**

20. Three days out, whilst still containing degrees of uncertainty, forecasts of the location, scale and consequence of coastal flooding will start to be sufficiently confident to guide local and national decisions on the implementation of preparedness measures. Flood Guidance Statements are initially likely to provide Low/Medium (Yellow/Amber) assessments and start to focus in on areas of greatest potential impact. Approximately 2 days out Flood Guidance Statements are likely to reveal assessments by area of Medium/High (Amber/Red) with increasing certainty as the event approaches. Information on likely weather conditions during evacuation and rescue will also be available.

#### **Decision-making**

21. This is a crucial phase when decisions will be needed on the balance to be struck between minimising disruption, and protecting life and property (including the pre-commitment of national support) while recognising that the balance is likely to differ significantly between and within localities. COBR is likely to be meeting at ministerial level, probably chaired by either the Prime Minister or the Secretary of



State for Environment, Food and Rural Affairs, to provide strategic direction for the national response. Locally, SCGs in at risk areas will be meeting to review their preparedness and, as necessary start to implement their response plans based on advice from the Met Office and the Environment Agency on the potential impact in their area. These discussions will be informed by Local Flood Advisory Service telecons between LRFs and the Environment Agency.

22. Decisions will be taken based on risk assessment during this phase could include:

- advice on strategic priorities;
- implementation of staged evacuation in at risk areas (see below);
- identifying areas where national support is likely to be required to affected communities and how best to provide this;
- reinforcing vulnerable CNI prioritising those providing essential services for the short term wellbeing of communities (e.g. critical power or water sites) and particularly any in at risk areas that serve a much wider geographic footprint;
- establishing Forward Operating Bases and Strategic Holding Areas and deploy national assets to these sites, based on the latest risk and impact assessments and local requests;
- ceasing non-essential operations in [parts of] the NHS to free up capacity and engaging transport operators to move assets to potential evacuation zones;
- identifying any requirements that may require emergency legislation or the relaxing of regulations to facilitate response and recovery efforts; and
- considering whether to request international assistance.

23. If required, the COBR Operations and Logistics Cell (COLC) will be established with support from other government departments. It will also draw in expertise from across government, the private and voluntary sectors as necessary to broker requests for and offers of assistance and manage the allocation of national resources to areas of greatest need in accordance with strategic direction provided by ministers. In principle, while scarce national assets will be coordinated and allocated nationally, once committed to a particular area they will be under the operational control of the appropriate local commander subject to any conditions set by COBR.

### **Evacuation and Shelter**

24. The decision to evacuate will be taken locally by SCGs based upon forecasts from the Met Office and advice from the Environment Agency on vulnerability of flood defences and unprotected communities combined with an understanding on the likely impact on these at risk communities. To inform this decision, each LRF



has identified when the decision to evacuate and pre-deploy is critical based on the topography, numbers of people affected and population requirement. In some areas, such as rural Lincolnshire, the time required to complete an evacuation for vulnerable people in more remote areas could be up to 72 hours from when the decision is made. Elsewhere, it might be just a few hours if there are safe areas nearby. In practice, this means that the most vulnerable will be moved first on a precautionary basis with an evacuation of larger numbers delayed to the last safe moment. Given the lead time for an effective evacuation process, it is probable that some local evacuation decisions may need to be made in the absence of certainty. To support local decision makers, national or mutual aid resources will potentially need to be identified and stood-up in parallel to local resources.

### **Media messaging**

25. There will be widespread media coverage speculating on the nature of the storm and risk it poses. A priority for HMG will be to ensure responsible and accurate reporting and to maintain public confidence in the response at all levels. This may include background briefings for journalists on the nature of the approaching storm, the implications, and planned response. Authoritative voices from the Met Office, Environment Agency and potentially the Government's Chief Scientist are likely to be deployed publicly. Key messages are likely to include: advising people how to find out if they are in at risk areas and, if they are, where to go for advice on what they can do to minimise the risk to them and their property; to listen to local TV and radio, and to follow any instructions they are given and advice on evacuation. A [www.gov.uk](http://www.gov.uk) web page would be set up as a single point of information on the risk and what to do about it.
26. The News Coordination Centre (NCC) would be activated to support of COBR and Defra as the Lead Government Department to coordinate national and local messaging.



## **Phase 4: Impact (from c6hrs before storm hits and the immediate response phase):**

### **Forecasting**

27. There should be high confidence in the likely location, timing and scale of the flooding at this stage, while noting that even slight changes in wind direction or speed could have a significant effect on the eventual impact. Detailed information on weather conditions during evacuation and rescue should also be available; including the likely time of arrival as the storm surge makes its way along the coast (e.g. it could be 12 hours for the peak surge to move from the East Yorkshire coast to Kent). There will be continued interest in longer-term weather patterns and the risk of further severe weather and its potential impact.

### **Decision-making**

28. Management of the emergency response will largely rest with local responders co-ordinated via SCGs and ResCGs. Precautionary evacuations should have been completed, buildings secured. The focus until the storm has passed will be on monitoring its effect, identifying vulnerable defences, supporting displaced people, and responding to any immediate emergencies. Once the storm has passed, the priority will be to complete an urgent assessment of the damage and prioritise consequence management activity and facilitate the safe return of people to their homes where possible.

29. COBR will be monitoring the situation carefully based on reporting from national and local agencies in order to establish a national picture identifying the extent of damage, any critical infrastructure at risk, disruption to supply lines or essential services, and priorities for action so that support can be directed to where it is most needed. The COLC will support this where necessary.

30. Increasing attention will also be given to the transition to longer term recovery, identifying on-going support required by disrupted communities, and how this can best be supported nationally. A particular priority is likely to be support to people in short term rest centres and how their longer term needs can best be met. A ministerially chaired group is likely to be established to consider issues arising and advise on the transfer to recovery and its timing both locally and nationally, recognising that transition will invariably differ across the country.

### **Media messaging**

31. Messages at this stage will focus on the event's impact, the actions by national and local agencies to minimise these impacts, and advice to people in affected areas.

### **Phase 5: Recovery:**

32. Once the situation has been stabilised in flood affected areas, there is no significant risk of resurgence, and (where appropriate) people can start to return home, local areas will move to the recovery phase on an area by area basis. The role of central Government during recovery is to provide the national policy direction through relevant government departments on recovery issues, including the rebuilding of defences, the restoration of everyday services such as utility and transport services, waste removal and emergency funding. It should support individuals physical and mental welfare, provide on-going shelter where needed; and support recovery of businesses. DCLG will offer GLO support in the form of a Recovery Liaison Officer to any Recovery Working Group set up by the SCG.
33. Nationally, there is likely to be a period of dual running in COBR given the range of impacts across the country with activity led by Defra and the Cabinet Office focusing on significant on-going emergency response and consequence management issues and the risk of further flooding, and DCLG leading the recovery effort nationally. These two workstreams will be coordinated by the COBR Secretariat, with key issues captured in the Common Recognised Information Picture, and interdependencies and key decisions considered by senior ministers. As immediate response issues are resolved, the national focus will move increasingly (and then completely) to the longer-term recovery effort at which point the locus of the Government's operations will move away from COBR to the national recovery effort.

### **Conclusion:**

34. The Governmental Coastal Flooding Response and Recovery Guide has been developed jointly by UK Government Departments and key front-line partners including the Met Office, the Flood Forecasting Centre and the Environment Agency. It will be regularly reviewed and expanded to build on future learning. More information on the Government's response to flood emergencies generally can be found in the National Flood Emergency Framework for England at <https://www.gov.uk/government/publications/the-national-flood-emergency-framework-for-england>.