

Supporting community action, testing professional response

# Exercise Watermark



## Final report September 2011

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# Foreword

Over five million people in England and Wales live and work in properties at risk of flooding from rivers and the sea. The Pitt Review of the 2007 summer floods recommended a wide-ranging test of our emergency response to severe flood events that would engage the public. In response to this recommendation, Exercise Watermark took place at the beginning of March 2011.

It is the largest and most successful civil defence ‘preparedness’ event ever held in England and Wales. Over 20,000 individual players from response organisations in England and Wales took part. They thoroughly tested flood readiness and demonstrated that existing plans and arrangements work well. As always, there were lessons to learn, but thanks to greater awareness, community rehearsals of emergency activities and professional responders testing and improving, people and communities in England and Wales are safer than before.

Managed by Defra, supported by the Welsh Government and delivered through the Environment Agency, Exercise Watermark set out to test how new arrangements would cope with a severe flood scenario in England and Wales. These arrangements included the National Flood Rescue Arrangements (NFRA), Multi-Agency Flood Plans (MAFP), new flood warning codes and elements of the Flood Forecasting Centre (FFC), along with other initiatives implemented since 2007.

The core scenario involved ministers at the Cabinet Office Briefing Room (COBR), the Welsh Government, more than ten UK government departments, 14 local resilience forums and over 40 separate locations. There were also 35 local exercises across England and Wales. These activities clearly demonstrated that England and Wales has the capability to respond to a severe, widespread flood emergency.

The Pitt Review made it clear that communities and individuals need to share the responsibility by preparing themselves for flooding. Exercise Watermark looked to raise awareness of flood risk and provide tools to help people develop and test individual and community flood plans. Over 125 community events and activities took place. Being prepared and able to do something yourself is vital in the face of flood risk, so we had significant input and support from the National Flood Forum (NFF), emergency responders, individuals and community groups.

Since the exercise, groups and organisations have debriefed their participants, and in many cases produced and started to implement their action plans. The UK government, the Civil Contingencies Secretariat (CCS) and the Department for Communities and Local Government (DCLG) are liaising on how to make sure information flows more efficiently from the centre to local levels since new structures have been put in place following the closure of regional government offices. Defra and the Welsh Government have committed to update their lead

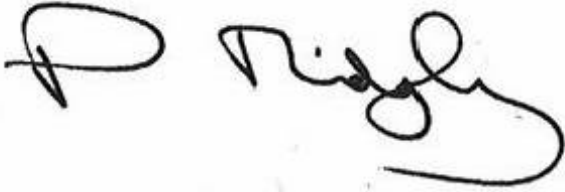
department plans for flooding and flood emergency frameworks. The East Coast Flood Group plans to further consider mass evacuation, including sharing best practices and improving mutual aid. DCLG is considering ways of improving recovery processes in light of Watermark including working with the insurance industry to consider how prepared it is for flooding. Many local resilience forums and individual organisations have also put action plans in place.

The Watermark Review Team received feedback as part of the debriefing process from professional partners, volunteers, community groups and individuals from over 1,100 questionnaires and 84 reports. The team used this feedback to put together an interim report with a range of key stakeholders, which formed the basis for discussion at the Exercise Watermark Conference. This was a final opportunity to review written correspondence and give feedback on this final report.

We welcomed this additional feedback to help complete the two Exercise Watermark final reports. This document contains learning points and recommendations from the exercise itself and the Exercise Watermark Planning, Delivery and Review report contains lessons and guidance on running an exercise of this scale. There are also stand alone reports from Exercise Watermark participants, including one from Environment Agency Wales, on behalf of the Welsh Government, covering the exercises held in Wales.

Finally, I would like to thank all those who contributed their time and efforts in planning, participating in and providing feedback on Exercise Watermark. The project involved a diverse range of groups including volunteers, members of the public, school children, private companies, government, emergency planners and responders. At times the feedback has raised conflicting opinions but we have worked hard to ensure that this report is balanced and that its recommendations are supported by sound evidence.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Peter Midgley', written in a cursive style.

Peter Midgley  
Exercise Watermark, Project Executive

# Executive summary

## Background

Defra asked the Environment Agency to deliver a senior government-level flooding exercise in response to a Pitt Review recommendation. The exercise was supported and co-sponsored by the Welsh Government and it had to be wide-ranging and publicly engaging. It would test the implementation of the other Pitt recommendations and enable many communities to participate in the exercise to mimic a major flood response.

This Exercise Watermark final report explains the findings from the Exercise Review Team, who will submit it to Defra and Welsh Government ministers with a number of recommendations. It aims to meet the following objectives:

- » explain the background to Exercise Watermark and give an overview of the review process
- » communicate the conclusions from the exercise and provide supporting evidence from the exercise review
- » consider what action is necessary following the exercise and inform the response from the UK and Welsh governments

Given the risk of flooding in the UK and its likely severity, the purpose of Exercise Watermark was to test how prepared we are in England and Wales since actions have been put in place from lessons identified following the summer floods in 2007 and other recent floods. It also identified learning and provided recommendations to ensure our flood response capability continually improves.

Exercise Watermark successfully met the targets set by Defra, the Welsh Government and the Pitt Review and England and Wales are now better prepared for flood. This final report to the UK and Welsh governments contains the learning points from the exercise and a number of recommendations to further improve our flood response capability at all levels, from local communities to the government.

The Exercise Watermark Planning, Delivery and Review Report is a stand-alone supporting document. It focuses on the planning, delivery and review of the Exercise Watermark project and outlines the feedback from those involved. The exercise planning process was challenging, but those involved overcame these challenges to produce an exercise that planners and players acknowledged as an excellent learning opportunity and a valuable test of the multi-agency response to flooding. We hope the information in the report will be taken into account for future exercises.

## What's in this report?

This document contains 36 recommendations for the UK and Welsh governments, responders and communities in England and Wales using feedback from Exercise Watermark participants. These are high level recommendations on being prepared for an emergency and incident response.

Section two highlights the purpose of Exercise Watermark and the three distinct elements of a core exercise, bolt-on exercises and community-based activities.

The core exercise tested the national response including interaction between the Cabinet Office Briefing Room (COBR), Welsh Government, UK government departments, multi-area coordination, and the strategic coordinating groups in several regions of England and Wales.

Local resilience forums and other responders organised and carried out bolt-on exercises, often using parts of the core scenario..

Community-based activities aimed to raise awareness of flooding and ways in which people can protect themselves and their property.

This section also describes the process followed by the Exercise Watermark Review Team.

Section three provides background to the learning from Exercise Watermark. From the learning points and recommendations, 11 key recommendations were agreed at the Exercise Watermark Conference. Emergency responders think that these recommendations will have most impact in making sure we are more prepared for flooding and wider emergencies. These are:

- » **Central and local management:** the Cabinet Office, with other government departments, the Welsh Government and local responders needs to further consider the relationship between Cabinet Office Briefing Room, the lead government department, the Department for Communities and Local Government and local responders for incidents falling between level two (serious emergency) and level three (catastrophic emergency). More explicit triggers would signal when issues need to be escalated and clearer guidance on what that means in terms of central coordination and local direction would be useful.
- » **Engagement and planning:** wide-area planning and arrangements for flood response organisations on the east coast should be developed and adapted for different wide-area emergencies. These groups should consider producing wide-area plans or frameworks.
- » **Evacuation planning:** the Department for Communities and Local Government, the Cabinet Office, the Welsh Government and UK government departments need to set out clear arrangements for

integrating multi-area evacuation plans and national coordination; in particular, evacuation routes, shelter, communication and mutual aid arrangements.

- » **Situation reporting (sitrep) and information requirements:** the review recommends that information requirements and reporting processes during an emergency are evaluated, including how available resources can best be used to satisfy audiences at all levels. Reporting and briefing processes need to be amended to meet information requirements and reflect current arrangements.
- » **Better use of technology for information sharing and reporting:** government should consider how to use technology better for information sharing and reporting to inform the national and local responses. Government should consider using a live, simple (mandatory) common information platform to use for mapping, digital visualisation, media and other source information.
- » **IT infrastructure:** future exercises involving strategic coordination centres and incident rooms /operation centres should be used to further test location-specific IT and communications infrastructure. The IT issues identified from Watermark, incidents and other exercise need to be resolved. In particular issues like internet guest logins, firewalls, blackberry users and multi-agency access need solutions which can then be shared as good practice.
- » **The National Resilience Extranet (NRE):** the Cabinet Office should review NRE usability and future expansion plans based on experience to date, encouraging more responders to use it.
- » **Flood Visualisation:** the Environment Agency should improve its flood visualisation capabilities and consider the merits of pre-prepared flood maps for emergencies, in consultation with local and national partners.
- » **Coordination of flood rescue assets:** Defra should work with the Department for Communities and Local Government, the Cabinet Office and the Welsh Government to clarify how local and national flood rescue assets should be coordinated, for example statutory duty, framework, Memorandum of Understanding, etc.
- » **Allocation of National resources:** Defra and the Department for Communities and Local Government should work with others to develop guidance and improve responders' understanding of how national resources and flood rescue assets should be allocated and coordinated during a flood. National level organisations and local resilience forums need to do more resource and asset planning before an incident.

- » **Social Media:** all government departments and emergency responders should assess social media capability, capacity and access and think about removing any barriers so they can start to lead the way in social media conversation.

Community engagement played a big part in the exercise and it was positive to see such a large number of events and initiatives. Some communities tested their own flood plans whilst for others Exercise Watermark encouraged them to start developing their own plans.

There is still much to do to improve the resilience of communities. Initiatives such as those supported by the National Flood Forum and the Flood Awareness Wales project are making good progress.

### **Next steps**

The success of Exercise Watermark demonstrates that England and Wales are now more prepared for flood. This final report sets out the thinking and recommendations to government. The review team worked with Exercise Watermark participants, including government, responders and communities to get the valuable feedback to provide the evidence, guidance and direction for this report. This report has been compiled by the Watermark Review Team, and does not constitute government policy but Defra and Welsh Government ministers will respond to these recommendations to further protect communities from flooding.

Defra will take responsibility for coordinating a UK government response to this report and its recommendations and the Welsh Government will do the same for Wales.



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# 1. Purpose

**1.1.** This final report sets out the background, conclusions and proposed recommendations from Exercise Watermark. The overall exercise involved a senior government-level flooding exercise, local emergency response and recovery exercises and wide-ranging activities involving local communities and businesses.

**1.2.** The intended audience for this report is Exercise Watermark participants, emergency planners and responders. The aim is to provide an opportunity to discuss and implement the lessons from Exercise Watermark.

**1.3.** This document has been written by the Exercise Watermark Project Team. It includes the final recommendations from the project and it will be published and presented to Defra, the Welsh Government and UK government departments for their response.

# 2. Introduction

## Background

**2.1.** Following the review of the summer 2007 floods, Sir Michael Pitt made a number of key recommendations to improve the response to widespread flooding.

**2.2.** Recommendation 49 stated, 'A national flooding exercise should take place at the earliest opportunity in order to test the new arrangements which central government departments are putting into place to deal with flooding and infrastructure emergencies.'

**2.3.** Exercise Watermark is part of how the government responded. Exercise Watermark was on a larger scale and more complex than any other exercise attempted in UK modern civil resilience. It was led by Defra and the Welsh Government, sponsored by the Cabinet Office and delivered by the Environment Agency.

## Exercise aim

**2.4.** The aim was to run a wide-ranging and publicly engaging exercise to test arrangements across England and Wales to respond to all aspects of severe flooding.

**2.5.** Exercise Watermark took place from 4 -11 March 2011, with live play from 7 -10 March 2011. The activity had three parts: core, bolt-on and community activities (see Figure one – the structure of Exercise Watermark).

## Exercise governance

**2.6.** Governance was run by a Defra-led project executive group chaired by Chris de Grouchy. It had representatives from Defra, the Welsh Government, the Cabinet Office and the Exercise Watermark Project Team.

## Exercise structure

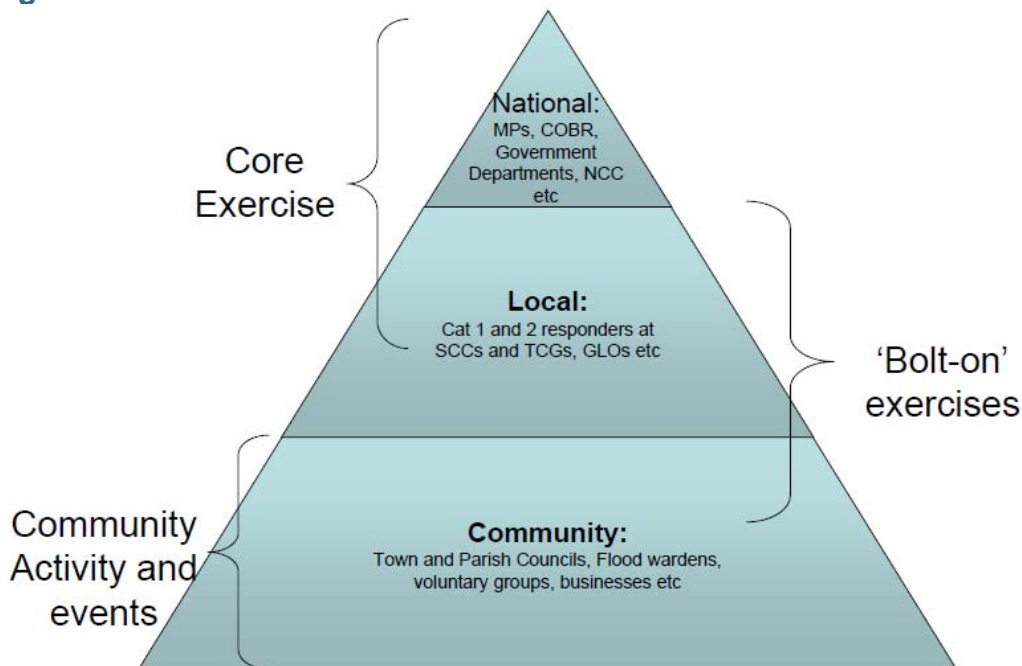
**2.7.** The core part set out to create a national-scale flood scenario (see Annex two for core timeline) across several regions of England and Wales. This scenario tested the response from Cabinet Office Briefing Room (COBR), Emergency Co-ordination Centre (Wales) (ECC (W)), UK government departments and multi-agency strategic coordination centres. It involved over 50 emergency command centres (see Annex three) and included surface water, river, reservoir and coastal flooding covering 14 local resilience forum areas.

**2.8.** Surrounding the core, there were 35 bolt-on exercises that used some parts of the core scenario but took place independently. They were organised and delivered by local resilience forums.

**2.9.** Community-based activities also took place across England and Wales. These ranged from testing business continuity, community and personal flood plans, to holding community-based demonstrations, workshops and flood exhibitions. These aimed to raise awareness of flooding and ways in which people can protect themselves and their property.

**2.10.** Details of where core, bolt-on and community activities took place are in Annex one.

**Figure one – the structure of Exercise Watermark**



## Success criteria

**2.11.** The exercise set out to honestly assess the flood response arrangements in England and Wales and it helped the response community to improve flood resilience. Organisations had the chance to demonstrate how they have improved, learning lessons from previous events, and to identify new lessons that will allow them to further improve their capability.

**2.12.** At the start of the project, the Exercise Watermark Project Executive Group set nine national objectives. These included emergency plan activation, mutual aid arrangements and media management. To support the primary objectives, 62 enabling objectives were put in place to demonstrate how we

would meet the original nine objectives. Annex five provides further detail on each of these objectives and a brief summary of the evidence to show how these were achieved.

## Exercise Watermark final report

**2.13.** This document is the *Exercise Watermark final report*. Section three describes the learning and outcomes from the core, bolt-on and community activity.

**2.14.** Under each heading, we will discuss and justify the conclusions we have reached from the various parts of Exercise Watermark including core and bolt-on play, community engagement, media and IT. We have linked the conclusions to specific recommendations and highlighted 11 key recommendations. The key recommendations are the ones the Exercise Watermark Conference feedback and the review team think should be given priority, as they will bring about the biggest improvements in the overall emergency response to flooding.

**2.15.** A full list of recommendations is at the end of the report in section five.

**2.16.** The *Exercise Watermark final report annexes* support this document. These contain a summary of recommendations, detailed supporting materials and a glossary.

## Other Exercise Watermark documents

**2.17.** There are three other documents which support this report:

- » The *Exercise Watermark planning, delivery and review report*: describes the planning, delivery and review of the exercise.
- » The *Exercise Watermark planning, delivery and review report annexes*: these contain detailed supporting materials and diagrams about the Exercise Watermark planning, delivery and review.
- » *Exercise Watermark - a summary for communities*: this explains the background to Exercise Watermark, case studies of community activities, explanation and findings relevant to community, a summary of the next steps for the findings and where to go to find more information.

# 3. Learning and outcomes from the exercise

## Summary

**3.1.** Following the success of Exercise Watermark, everyone who took part learned some key lessons. This section looks specifically at what they learned during the exercise, supported by evidence we captured during the exercise including debriefs, workshops held with representatives from participating groups, the Exercise Watermark conference, written comment on the Exercise Watermark Interim Report and face to face meetings with key stakeholders.

**3.2.** We have split these lessons into the following categories:

- » Management and coordination
- » Effectiveness of plans and procedures
- » Communication
- » IT infrastructure and systems
- » Data and information
- » Partnership working
- » Resources
- » Media response
- » Community engagement

## Management and coordination

**3.3.** Cabinet Office Briefing Room (COBR) and Lead Government Department (LGD)

**3.4.** The Defra National Flood Emergency Framework (NFEF), governed command and control during Exercise Watermark, as it would for a real flood. This is in line with Cabinet Office Concept of Operations (CONOPS). In Wales, they used the generic response structure established under the Pan-Wales Response Plan.

**3.5.** The National Flood Emergency Framework was developed following a recommendation from the Pitt Review. It is a framework for England but is similar to the Wales Flood Response Framework developed for Wales.

**3.6.** Its purpose is to provide a policy framework for flood emergency planning and response. This enables organisations responsible for planning, delivering or supporting local responses to work in an integrated way. These arrangements are flexible enough to respond to local needs but their consistency helps improve the overall response.

**3.7.** During Exercise Watermark, the outline CONOPS/NFEF response framework worked reasonably well. As described in the Cabinet Office Briefing Room (COBR) process for national government emergency response, Defra was the lead government department (LGD) for floods.

**3.8.** As the LGD, Defra felt it became too focused at times, on meeting COBR's information requirements and did not spend enough time concentrating on making or raising key strategic decisions. Feedback from Defra suggested that if they had been more focused on their own information requirements, their briefings might have improved and allowed them to pass more strategic issues to COBR. Please note that Welsh lead government department arrangements are different. See paragraph 3.21.

**3.9.** The feedback suggests that some UK government departments and national organisations do not fully understand COBR's roles and responsibilities, and in particular the relationships between LGDs and COBR. On day one (Monday) of the exercise, Defra and COBR communicated two different battle rhythms, which caused confusion and duplicated effort.

**3.10.** Some of those who took part were new to or less experienced in their roles at COBR. It would help if government departments used the Central Government Emergency Response Training (CGERT) more to improve understanding of COBR's roles and responsibilities.

**3.11.** At times, COBR risked becoming too focused on the operational response rather than strategic decision making. Strategic priorities were not prompted or formally identified at COBR until day two (Tuesday). Feedback suggests that this might have been because COBR did not understand the full extent of the situation from the information it received during day one. Some parts of the exercise were artificial and simulated to create a flood scenario, which might also have had an impact. For example, a news clip was played too soon in the exercise which confused those at COBR.

**3.12.** The Cabinet Office Concept of Operations (CONOPS) and the Defra National Flood Emergency Framework describe the hierarchy, roles and responsibilities of LGD, Scientific Advisory Group in Emergencies (SAGE) and COBR but workshop groups recognised that some responders were not aware. Feedback suggested that there should be more frequent, targeted training (such as GCERT) for senior roles and that raising awareness of the current LGD, SAGE and COBR arrangements and communication for all response levels before an incident would help.

**Recommendation 1** – The review recommends that the Cabinet Office should communicate the roles, responsibilities and interfaces between the lead government department, Cabinet Office Briefing Room and Scientific Advise Group for Emergencies before and during an incident.

**3.13.** In the last decade, most flooding incidents used a 'subsidiarity' approach to management, where decisions are made at the lowest appropriate level, and coordinated at the highest necessary level. This contrasts with a flooding event



on the scale of Exercise Watermark, which has multiple local resilience forum areas and different scenarios. An event like this might need more of a 'top-down' approach to coordinate decisions, communications and resources properly. In England, this is possible within the NFEF but the process for switching to 'top down' management is unclear.

**3.14.** The level of emergency response and the balance of local control with national coordination and management are defined in CONOPS and classified as:

- Local emergencies - need a local response from the strategic coordinating group (SCG) downwards
- Significant emergency (level one) - needs a response from lead government department downwards via the SCG
- Serious emergency (level two) - the Cabinet Office Briefing Rooms (COBR) would coordinate the central government response to a serious emergency under the leadership of the lead government department
- Catastrophic emergency (level three) - full COBR management. Emergency powers might be considered but if it is considering using these, the UK government will consult with devolved administrations

**3.15.** The scope and complexity of Exercise Watermark tested the NFEF/ CONOPS process because in England the impact lay between level two (serious, with LGD coordination via COBR) and level three (catastrophic, with COBR control which may consider emergency powers).

**3.16.** The Exercise Watermark Project Executive Group decided that the Exercise Watermark Project Team would run the exercise without using emergency powers. But it soon became obvious from the COBR meetings that the exercise was stretching into level three which would need national management. With COBR's level of control unclear, different expectations of the roles of COBR, Defra coordination and local management created some tension.

**3.17.** This was not an issue during Exercise Watermark in Wales due to the different scale of requirements for national management and the scale of the flooding scenario.

**Key recommendation 2** – The review recommends that the Cabinet Office, with other government departments, the Welsh Government and local responders needs to further consider the relationship between Cabinet Office Briefing Room, the lead government department, the Department for Communities and Local Government and local responders for incidents falling between level two (serious emergency) and level three (catastrophic emergency). More explicit triggers would signal when issues need to be escalated and clearer guidance on what that means in terms of central coordination and local direction would be useful.

## Arrangements in Wales

**3.18.** The Wales Flood Response Framework sets out the tiered arrangements from initial local response to establishing an SCG and where necessary putting Welsh Government crisis structures in place via the activation of Pan-Wales Response Plan.

**3.19.** The Pan-Wales Response Plan describes Wales-level coordination through the Emergency Co-ordination Centre (Wales) (ECC (W)). This is different to incidents in England as the Welsh Government has devolved responsibility for a number of responder agencies and policy areas (such as flooding) and acts as the LGD. It is also the lead for managing recovery arrangements after an incident. The Welsh Government links with COBR but also has the authority to make strategic decisions.

**3.20.** The Pan-Wales Response Plan has three levels. Under level one, the ECC(W) remains on stand-by and arrangements are put in place to activate it if the emergency escalates. For level two emergencies, the ECC(W) will activate and link with all strategic coordinating groups. Level three is only triggered by introducing emergency powers for emergencies in Wales.

**3.21.** The response to the river flooding in Wales during Exercise Watermark warranted opening the ECC(W) up to level two of the Pan-Wales Response Plan. Only one Welsh strategic coordinating group was directly impacted by the core scenario, so these arrangements were not put under pressure. In an event affecting England and Wales that reached CONOPS level three, UK government would consult the Welsh Government. If it did not directly affect Wales, then COBR would take control and inform the Welsh Government, except where the urgency of the situation does not allow for this consultation.

## Department for Communities and Local Government (DCLG)

**3.22.** We no longer have an English regional tier of government offices, but DCLG provided support to all 14 core playing SCGs using existing government liaison officers (GLOs) and Department for Work and Pensions (DWP) staff.

## Case study: New DCLG arrangements

DCLG took the emergency coordination role, done previously by regional resilience teams, by setting up the new Resilience and Emergencies Division (RED). While Exercise Watermark happened just three weeks after their staff took on new roles, DCLG were able to provide GLOs, deputy support to core SCGs and the evacuation bolt-ons, as well as running a national operations centre.

Exercise Watermark gave the opportunity for DCLG to trial the new arrangements and pilot the single operations centre response model, located with departmental policy leads, the office of the Chief Fire and Rescue Advisor (CFRA), senior officials and the ministerial team. The response model was effective and will be developed further using the Exercise Watermark experience and lessons.

SCGs have high expectations of the GLOs as representatives of the government. With staff coming from a wide range of professional backgrounds (for example, DWP) these 'volunteer' GLOs must have the right training to give them the knowledge and capabilities to do the role.

**3.23.** Feedback suggested that local responders did not feel confident that their expectations of the GLO role matched those of government. GLOs need to field a range of questions from the local resilience forum and government departments. Some groups suggested that more GLO resource should be available to take part in local exercises to help improve local responders' understanding of the role and remit.

**3.24.** Participants also suggested that there could be a link for GLOs into the Civil Contingencies Secretariat (CCS) and COBR. This would speed up communications with a more direct link from SCGs to the centre.

**3.25.** Local resilience forums (LRF) felt that top-line briefings (TLB) and other critical information did not reach them quickly enough and in some cases they did not receive them at all. The regional resilience teams have traditionally done this and the LRF felt there was not enough information from COBR and the lead government department to brief the strategic coordination groups.

**3.26.** One GLO said that it was difficult for SCGs to get the national picture. They needed the GLOs to tell them what was going on and how severe the impact was for them. They wanted to know which other SCGs had formed and whether a major incident had been declared. They did not feel that TLBs and commonly recognised information pictures (CRIPs) told them this in an informative or timely way. Information needs to flow between national and local levels. This is discussed in more detail in the communications section of this report.

**Recommendation 3** – The review recommends more regular training and exercises for those who only act as government liaison officers during an incident, to help them to understand their role and responsibilities. This should include local responders and government to make sure they also understand the role and the support government liaison officers can give at a local level.

**3.27.** Feedback from the conference strongly suggested the need to check in more detail, if removing the Regional Civil Contingencies Committee (RCCC) and Regional Co-ordinating Group (RegCG) has left gaps in response structures.

**3.28.** For the east coast flooding scenario, some LRFs felt that not having a RegCG made it difficult for local multi-area decisions to be made. However, DCLG's Resilience and Emergencies Division (RED) hosted some east coast teleconferences with national and local partners, as a possible alternative to the obsolete regional arrangements. Unlike the previous RegCGs, these teleconferences were more flexible because they were not confined to specific boundaries and applied to a multi-LRF environment.

**3.29.** Overall, feedback on these teleconferences was positive but there is a need to develop the model further to adapt it to different wide area emergencies. Any work on these arrangements needs to have clear aims and scope so that they meet the needs of national and local partners and have a clear place in command and control structures.

**Recommendation 4** –The review recommends that the multi-agency teleconferences involving responder organisations along the east coast, led by the Department for Communities and the Local Government-Resilience Emergencies Division should be developed to adapt them for different types of wide area emergencies. An alternative communication mechanism should be in place in case telecoms fail.

**3.30.** The exercise planners thought that the east coast LRF's working group arrangements demonstrated good practice for managing a risk that affects more than one region. There is a need to establish clear plans and authorisation to make sure strategic decisions can be taken.

**Key recommendation 5** – The review recommends that the wide-area planning and arrangements for flood response organisations on the east coast should be developed and adapted for different wide-area emergencies. These groups should consider producing wide-area plans or frameworks.

## Government liaison officer approach in Wales

**3.31.** Under the Pan-Wales Response Plan, the Welsh Government uses liaison teams for each strategic co-ordination centre in Wales. This was tested during Exercise Watermark with Welsh Government Liaison Officers (WLGO) working from the Dyfed Powys SCC and acting as a link between the SCG and the ECC (W). The Welsh Government Liaison Team has volunteers from across Welsh

Government departments, and there is a central training programme for the volunteers to give them the skills they need.

## Effectiveness of plans and procedures

### Evacuation plans

**3.32.** During the exercise there was a mass evacuation of the east coast of England as well as smaller-scale evacuations in Derbyshire, West Yorkshire, Dyfed Powys, Devon and Cornwall. Local resilience forums have different approaches to evacuation planning which means the plans vary in quality. Current plans are also locally focused and it is important to consider wide-area incidents, their implications and the time needed to evacuate.

**3.33.** The Cabinet Office is responsible for general evacuation and shelter policy for England and Wales under the Capabilities Programme and provides guidance on writing evacuation and shelter plans. No single department provides quality assurance or a performance management role to make sure plans produced locally integrate with neighbouring local resilience forums' plans when the response is across boundaries. DCLG-RED supports local planning and works collaboratively to help with multi-area evacuation planning at a local level. Feedback suggested that peer review might be useful to help identify overlap and conflict in evacuation plans.

**3.34.** Work has already begun to join up evacuation plans in some areas including communications, triggers, evacuation routes, shelter and resources. Some feedback suggested that national coordination and planning overlay needs to improve to ensure they are fit for purpose in a wide-area incident.

**Key recommendation 6** – The review recommends that the Department for Communities and Local Government, the Cabinet Office, the Welsh Government and UK government departments need to set out clear arrangements for integrating multi-area evacuation plans and national coordination; in particular, evacuation routes, shelter, communication and mutual aid arrangements.

**3.35.** Participants presumed DCLG was the lead department for evacuation and shelter during Watermark in England. This was because the regional resilience forums used to develop evacuation plans, led by local authorities. DCLG is responsible for many activities, however local authorities also run services on behalf of other UK government departments and devolved administrations, for example transport and social care.

**3.36.** UK government department feedback suggested a lack of understanding around who owned some policy issues, such as evacuation and shelter. This caused duplication and uncertainty about information requirements, roles and responsibilities. The lead UK department for evacuation in an emergency depends on the emergency's consequences and impact.

**Recommendation 7** – The review recommends that the lead government department list should be reviewed with an explanation to clarify the UK government department policy lead for evacuation and shelter.

**3.37.** The feedback highlighted many examples of good practice in evacuation planning and exercises and we need to make sure we share this information. At the Exercise Watermark conference, Lincolnshire LRF shared a timeline of when decisions needed to be made to evacuate Lincolnshire in the event of east coast flooding. Many participants thought this was very useful.

**Recommendation 8** – The review recommends that local resilience forums, supported by the Cabinet Office and the Department for Communities and Local Government, should share examples of good practice and peer review the evacuation plans.

**3.38.** The Department for Transport (DfT) expressed concern that evacuation plans are being developed without the benefit of transport operator advice. In particular, Network Rail and the Association of Train Operating Companies (ATOC) could be consulted about the capacity to move large numbers of people.

**3.39.** The DfT also said that a number of plans are based on large numbers of people deciding to evacuate themselves ('self evacuation'), which is not sustainable for an Exercise Watermark scenario where people need to be evacuated across a wide area..

**3.40.** Civil Contingencies Secretariat (CCS) guidance on evacuation planning does cover transport; but feedback from local resilience forums showed that additional help with this planning would be useful. They also said that guidance would be more useful if it had good practice examples from existing evacuation plans and case studies.

**Recommendation 9** – The review recommends that local resilience forums' evacuation planning should involve Category two responders and other relevant groups, such as transport operators and the Highways Agency.

**Recommendation 10** – The review recommends that the Cabinet Office should consider including good practice examples and case studies in its evacuation and shelter guidance when it is next updated.

## Planning assumptions

**3.41.** After Exercise Watermark, Defra, DCLG, other key departments and insurance representatives met for a recovery handover. Observers at this meeting said that the national planning assumptions and impact assessments for severe widespread flooding are not consistently applied to recovery planning across government departments and the insurance industry. For example, there

were no UK government activities in place when local authorities' plans were exceeded in areas such as housing and education.

**Recommendation 11** – The review recommends that government department emergency response teams should engage with their department policy teams to embed national planning assumptions and impact assessments.

### **Military Aid to Civil Authorities (MACA) arrangements**

**3.42.** Government departments, local resilience forums and government liaison officers in some areas of England saw a need for more training on MACA activation mechanisms, timescales and resources.

**3.43.** Strategic coordination groups (SCGs) across the country requested military support using formal arrangements. Support from military colleagues helped a lot with MACA processes, but some SCGs felt that they might not have been successful in requesting support if this local guidance had not been available to them.

**3.44.** Local resilience forums (LRFs) said they wanted to understand more about what resources might be available and how long it would take for their request to be processed. The timescales need to be understood at the strategic level so we can plan better and use military aid effectively. LRFs suggested developing local planning procedures that include estimated timescales and that these should be rehearsed in local exercises.

**3.45.** Many of the participating military personnel also gave feedback on the support they were able to provide. They noted that often there was not enough time between SCG meetings to implement the actions and that they needed more military subject matter experts to attend.

**3.46.** Participants wanted to understand more about how any military resource would be allocated and managed. The military use a case-by-case approach and the responders asked if this is based on greatest need and what happens if demand exceeds capacity. These areas are explored further in the resource section of this report.

**Recommendation 12** – The review recommends that more responders should use existing training on Military Aid to Civil Authorities (MACA). Exercises locally and nationally should include the arrangements for activating MACA more frequently. The military should be involved to make sure everyone understands what military support may or may not be available and how to access it in an emergency.

**3.47.** Feedback from the Exercise Watermark Conference noted that recent examples of military aid used in response to the Christchurch, New Zealand earthquakes, proved very useful from the response to the recovery stage. In this situation, military aid was requested early on but normally, military aid can be seen as the 'last resort'. We should learn from this and consider whether more

could be done to make military and European aid part of the planned and integrated response to severe widespread flooding.

### Flood warning codes and other weather tools

**3.48.** Feedback suggests that some local resilience forums (LRFs) and lead government departments (LGDs) have a limited understanding of the Met Office and Flood Forecasting Centre (FFC) weather products and the Environment Agency's flood warnings. With lots of technical terminology, they can be confusing and difficult to use in a flood scenario.

**Recommendation 13** – The review recommends that the Environment Agency, the Flood Forecasting Centre and the Met Office should reinforce the programme to improve responders' awareness and understanding of flood forecasts, rainfall alerts, flood warnings and their possible impact.

**3.49.** There is also a lack of consistency in the use and understanding of the Environment Agency's new flood warning codes and how they work alongside other weather products such as flood guidance statements. A good example of this is the different expectations local resilience forums have about the role they play in making decisions to issue the Environment Agency's Severe Flood Warnings. One strategic coordination group decided not to be involved at all, and another was fully engaged and using the issuing message as an opportunity to communicate further information to the public.

**3.50.** The Environment Agency raised awareness about the new flood warning codes but feedback suggests this campaign might not have reached the right people and was affected by high staff turnover. A 'train the trainer' programme would help and has been put forward as a suggestion.

**Recommendation 14** – The review recommends that the Environment Agency should provide clearer guidance on how the decision to issue a severe flood warning is reached, and the role of the strategic coordination group and the Environment Agency in this process.

**3.51.** Feedback from Kent LRF after Exercise Watermark, suggested some adjustments to the role of the Scientific and Technical Advice Cell (STAC). STACs tend to focus on health-related advice during an incident, but learning from the exercise showed that these groups could also help improve understanding of local impacts, flood warning products and possible flooding scenarios.

**Recommendation 15** – The review recommends that local resilience forums should consider expanding the role and membership of scientific and technical advice cells to include technical skills relevant in a flood, (for example hydrologists, structural engineers and forecasters).



## Communication

### Reporting – Situation Reports (SitReps), Commonly Recognised Information Picture (CRIP) and battle rhythms

**3.52.** There are a number of different structures, processes, technology and formats for reporting. These national and local variations mean that vital information can't always be shared freely or quickly.

**3.53.** There were some good examples of SitReps and reporting templates but they were all tailored to the needs of individual groups. Each method led to large volumes of information for Defra, the Welsh Government and COBR which often lacked vital context for those who had not read it before. This meant sometimes it was not clear which items were for information and which were for debate and decision and by whom.

**3.54.** The Cabinet Office SitRep template highlights new information in yellow and has a separate section at the top outlining 'Key Issues for Commonly Recognised Information Picture (CRIP)'. This template is intentionally flexible so that it can be tailored for different incidents and it usually takes a few days for the relevant lead government department to understand key issues and themes to tailor the SitRep.

**3.55.** The current Cabinet Office SitRep template asks for some detail about the impacts and the operational response. Sometimes this is not available and is distracting for the responders. It also encourages government departments and COBR to get involved in the detail rather than high-level thinking and decision making. Participants need a better awareness of the level of detail needed for each of the reports.

**3.56.** Many organisations contributed to the multi-agency SitRep via the local resilience forum and their parent organisation or department's report. Feedback strongly showed that organisations thought the system used in Exercise Watermark of 'duel reporting routes' to provide information to UK governments was time consuming and could be confusing. Participants said it increased pressure on organisations and made reporting timescales very challenging. They also thought some of the information that parent organisations or departments needed was duplicated in existing multi-agency reporting.

**3.57.** The CRIP primarily briefs ministers and informs COBR meetings. National briefings such as CRIPs can be used to inform communications to local responders when appropriate

**3.58.** The Cabinet Office Concept of Operations (CONOPS) says that when they existed, regional government offices provided a CRIP summarising the position of local services in their area. In practice, this varied across the country and briefings varied depending upon the incident and the location. Exercise Watermark tested new DCLG and government liaison officer arrangements and feedback from local responders suggested that they did not have a briefing that

filled this gap. CONOPS says that devolved administrations will need to summarise the local position when necessary.

**3.59.** Local resilience forums (LRFs) did not feel that CRIPs, Top Line Briefings (TLB) and other critical information reached them quickly enough and in some cases they did not receive them at all. Previously regional resilience teams distributed these when they were needed. LRFs felt there was not enough information coming from COBR and the lead government department on the bigger picture to brief the strategic coordination groups.

**3.60.** The cover email for the CRIPs clearly marks them as cabinet papers and not for circulation. If they need to be passed on, you have to contact the Civil Contingencies Secretariat. Taking security restrictions into account in this process is time consuming and needs to be reviewed to allow information through to strategic coordination groups (SCGs) more quickly.

**3.61.** There is an expectation that DCLG–RED and government liaison officers have to communicate the outputs from COBR meetings to SCGs. This process has not yet been formally agreed and needs some thought, in particular, the principal of subsidiarity and if this route is the most appropriate.

**Key recommendation 16** – The review recommends that information requirements and reporting processes during an emergency are evaluated, including how available resources can best be used to satisfy audiences at all levels. Reporting and briefing processes need to be amended to meet information requirements and reflect current arrangements.

**3.62.** Concerns were also raised about the speed at which CRIPs and SitReps went up from tactical to strategic level to COBR. Reports took a long time to write and so information was often out of date by the time COBR received it. This is the case for most dynamic and fast-moving scenarios. The most up to date briefing in COBR will often come from the ministers and officials around the table. They are briefed by their department before the meeting and the CRIP will be updated with this information and anything new from the meeting. Participants felt the process could be quicker, giving decision makers wider and more up to date information.

**3.63.** Communication between the local and centralised levels was not as effective as it could have been. The national and local battle rhythms were not connected, which affected communications and decision making. The artificial nature of the exercise did cause issues because the usual 24-hour timescale was compressed. Feedback suggested that a common information platform would help speed up reporting and information flow. Some participants suggested that the National Resilience Extranet (NRE) could be adapted for this purpose whilst others thought that the NRE had not proved itself yet so was not suitable.

**3.64.** During Exercise Watermark participants used other systems to distribute situation information which the feedback suggested would be useful. For example, CLIO, used by some police forces, secure LRF websites and the exercise delivery tool, TES, used by some umpires and exercise control during

the core element of Exercise Watermark provided a picture of what was happening at playing locations. At the Watermark Conference, participants mentioned that NRE was not mandatory, which may have reduced how much it was used during the exercise.

**Key recommendation 17** – The review recommends that government should consider how to use technology better for information sharing and reporting to inform the national and local responses. Government should consider using a live, simple (mandatory) common information platform to use for mapping, digital visualisation, media and other source information.

## Contact details

**3.65.** In planning the core element of Exercise Watermark, finding telephone numbers and email addresses for playing locations, roles and individuals was a challenge. This might be partly because this was an exercise.

**3.66.** Some contact details had been reserved for a real incident. In other locations, numbers and email addresses are not allocated until an incident happens. It was noted that with over a month's notice, some organisations could not provide contact details in advance, which shows that there is not a defined route to access this information and it continually varies. Players noted that in some areas inaccuracies in the exercise contact directory affected COBR's and others participants' ability to clarify and request information.

**3.67.** *HM Government Emergency Preparedness* guidance suggests that contact details should be part of the minimum information for generic and specific emergency plans. The experience from planning Exercise Watermark strongly suggests that more needs to be done to identify contact information in advance.

## Airwave

**3.68.** Operational response teams in some locations used Airwave. They said local resilience forums need to review the National Policing Improvements Agency's *Standard Operating Procedure Guide on Multi-agency interoperability* and to make sure protocols are in place and understood.

## IT infrastructure and systems

**3.69.** IT infrastructure is very different at each command and control location across England and Wales, which can lead to a disjointed approach to managing an incident. Areas using a purpose-built facility have the advantage because older or adapted facilities can often only support limited IT infrastructure and systems.

**3.70.** Issues such as IT incompatibility, poor mobile coverage and internet connectivity issues caused problems at strategic co-ordination centres (SCC)

and emergency operation centres (EOC) at all levels. This slowed activity and limited how much information responders could share.

**3.71.** Premises with high security restrictions on IT infrastructure such as data sticks, email and website access, can cause difficulties for multi-agency users.

**3.72.** IT infrastructure testing done before the core element of Exercise Watermark, showed that security restrictions on some email accounts added up to four hours' delay in receiving emails. Some words, for example, Middlesex, meant emails were quarantined.

**3.73.** Blocked access to social media sites in some cases limited the information available to responders. This is covered in detail in the media response section.

**Key recommendation 18** – The review recommends that future exercises involving strategic coordination centres and incident rooms /operation centres should be used to further test location-specific IT and communications infrastructure. The IT issues identified from Watermark, incidents and other exercise need to be resolved. In particular issues like internet guest logins, firewalls, blackberry users and multi-agency access need solutions which can then be shared as good practice.

### National Resilience Extranet (NRE)

**3.74.** A small number of groups used the NRE as an incident response tool during Exercise Watermark. They mentioned how useful it was in their feedback and several local resilience forums intend to use it in future exercises and incidents.

**3.75.** Some groups are already using the NRE to store documents and make them more widely available. There are still some issues with the speed at which information can be viewed but numbers of licence holders are rising.

**3.76.** There were a number of reasons in the feedback why more participants did not use NRE during Exercise Watermark. Some local resilience forums (LRFs) thought that it was not fit for purpose or proven as an incident response tool. Many reported issues with the speed and problems using the system. The cost of licenses was an additional problem and some LRFs said they had usable websites that responders felt worked better and did not have an additional licensing cost. Others thought NRE should be compulsory for response organisations.

**Key recommendation 19** – The review recommends that the Cabinet Office reviews NRE usability and future expansion plans based on experience to date, encouraging more responders to use it.

## Data and information

### Mapping

**3.77.** Players at all levels commented that the Environment Agency's flood maps are not easily accessible or available in compatible GIS format and do not include asset information. Environment Agency feedback strongly suggested that more maps could have been prepared in advance to provide mapping information to government, strategic coordination groups (SCGs) and tactical coordinating groups (TCGs) more quickly.

**Key recommendation 20** – The review recommends that the Environment Agency improves its flood visualisation capabilities and consider the merits of pre-prepared flood maps for emergencies, in consultation with local and national partners.

**3.78.** Local resilience forums (LRFs) in England and Wales said that it would be useful to be able to add different types of data to maps, such as infrastructure, access routes, evacuation areas, etc. Within the LRFs, there are many information sources owned by different organisations all in different formats.

**Recommendation 21** – The review recommends that LRFs identify data sets to help their response arrangements. They should work with the Environment Agency to make these available in a compatible format for flood mapping and visualisation services for individual local-level commands during an incident.

**3.79.** To improve access to mapping information, we should consider using more collaboration systems to share data rather than relying on email.

**Recommendation 22** – The review recommends that the Environment Agency shares flood mapping more widely during an incident, so that it is accessible in tactical coordinating groups, strategic coordinating groups and national emergency operation centres.

**3.80.** During Exercise Watermark, Ordnance Survey (OS) mapping and imagery services were demonstrated at COBR and a number of different GIS layers were displayed. Participants thought this was very helpful in understanding the impacts of the scenario and suggested that OS services would be useful for different types of incident planning and response.

**Recommendation 23** – The review recommends that UK government departments and the Welsh Government need to make better use of existing mapping and imagery services for emergency planning and response.

## Partnership working

**3.81.** For a significant number of participants, the opportunity to work together during the exercise was one of the most successful aspects. Understanding the role and responsibilities of others helps those involved to achieve an effective and joined-up emergency response.

### Case study - Environment Agency Wales and South Wales Fire Rescue Service flood awareness event

A joint South Wales Fire Rescue Service water rescue training demonstration and Environment Agency Wales flood awareness event was held at the Cardiff International White Water rafting centre on Friday 11 March.

Welsh Fire Rescue Services (WFRS) and the Royal National Lifeboat Institution (RNLI) used the event to announce their new flood rescue partnership. Welsh Government Minister for the Environment and Sustainability, Jane Davidson, attended and took part.

Cardiff International White Water Centre can simulate fast flowing floodwater and proved an ideal venue for the WFRS and RNLI to demonstrate water rescue challenges and risks. South Wales Fire and Rescue Service also displayed their water rescue kit whilst Environment Agency Wales demonstrated flood prevention products to the visiting public.

The partnership builds on the work of the multi-agency Inland Water Rescue Group set up by the Joint Emergency Service Group to look at flood rescue capability across Wales. It allows the WFRS to benefit from RNLI boat expertise and the RNLI to use WFRS's technical expertise on swift water awareness and rescue. This cost-neutral agreement covers training, training standards and quality assurance and is the first partnership of its kind.

**3.82.** Some areas still need to improve. In the feedback, some participants felt that others, such as utility companies, were reluctant to engage proactively with local resilience forums before and during an incident. Utility companies play a crucial role in an incident and hold vital information about critical infrastructure for example, water treatment plants and power stations, which are important to response and long-term recovery.

**3.83.** Some utility companies struggled to support strategic coordination groups (SCGs) because of limited resources and large operating areas covering multiple local resilience forum boundaries. This was especially challenging during a wide-area flood with multiple active SCGs.

**Recommendation 24** – The review recommends that the Cabinet Office continues to work with the Department for Communities and Local Government, the Welsh Government and relevant UK government departments to review the arrangements for utility companies' involvement in local resilience forums and strategic coordination groups etc, now government offices have closed. There needs to be a better match between the supply and demand for their expertise during incident response and recovery.

**3.84.** There are examples where utility companies provided excellent local support during the exercise. This was usually thanks to strong existing links between the local resilience forum and the utility company which meant that expert advice and information on critical infrastructure was readily available.

**3.85.** The Critical Infrastructure Resilience Programme published the guide *Keeping the Country Running: Natural Hazards and Infrastructure* for consultation. It advises on sharing information about infrastructure and aims to help emergency planners work together to make infrastructure and essential services, for example water supply or power supply, more resilient.

**Recommendation 25** – The review recommends that the Cabinet Office and lead government departments should engage with utility companies to improve the level of their involvement preparing for incidents. This needs to include sharing information as described in *Keeping the Country Running: Natural Hazards and Infrastructure* and multi-agency training and exercising.

## Case study: cross-boundary working

The exercise provided some excellent opportunities for bolt-on exercises. Some of these exercises integrated with the core scenario and achieved some high-quality cross-border work.

Nottingham and Nottinghamshire LRF, Leicester, Leicestershire and Rutland LRF, and Northamptonshire LRF aligned to the tidal flooding scenario in Lincolnshire. Lincolnshire had to send 9000 evacuees to neighbouring local resilience forums (LRFs) as part of a mass residence evacuation from tidal inundation zones.

LRFs which were unaffected by the core scenario, had the opportunity to practice mass evacuation and long-term recovery planning, including the temporary shelter, long-term shelter and transport logistics. This element of exercising is rarely done at this scale.

The exercises were a success and revealed some new and interesting mass evacuation challenges faced by local areas.

Local players identified a need to work more closely with other authorities, including those in neighbouring LRFs, to proactively volunteer information and be more open to support planning and response.

## Resources

### Coordinating Search and Rescue (SAR) assets

**3.86.** Currently, no single organisation is responsible for flood rescue arrangements. Feedback from the exercise and the conference suggests that the way lead government department (LGD) responsibilities are distributed prevents flood rescue response coordination from being as effective as it could be.

**3.87.** DCLG and Welsh Government are responsible for government policy for fire and rescue services in England and Wales. Government objectives are set through the National Coordination and Advisory Framework (NCAF), which encourages fire and rescue authorities to work together in the event of a major response such as flood rescue.

**3.88.** Defra is the LGD for flooding in England, and has compiled a UK National Asset Register with a list of competent flood rescue teams and equipment from statutory agencies and the voluntary sector across the UK. This is a live document and those registered could be asked to support the response to a major or wide-area flood event in the UK.



**3.89.** The agreement to use accredited flood rescue teams and equipment is maintained through a Memorandum of Understanding (MoU) between Defra and each registered flood rescue responder. The register is maintained by the Fire & Rescue Service National Coordination Centre (FRSNCC) on Defra's behalf.

**3.90.** FRSNCC said that it found flood rescue assets challenging to track and manage. Participants agreed that the National Resilience Assurance Team (NRAT) could be responsible for flood rescue assets but this does not offer a way to continue to fund the assets.

**3.91.** Feedback from participants said flood rescue organisations (for example, Fire and Rescue Service (FRS), Royal National Lifeboat Institution (RNLI), the military, MCA and others) need to use their resources better, decide whether there is enough resource and to consider how best to coordinate with others.

**3.92.** In Wales, the Joint Emergency Services Group established an Inland Water Rescue Group (IWRG) to look at flood rescue capability. This is a good example of flood rescue asset coordination. The group has representatives from organisations in Wales with water rescue capability such as emergency services, the RNLI, mountain rescue organisations, and the Royal Society for the Prevention of Cruelty to Animals (RSPCA). The group's key task is to agree a common understanding of what resources are available and each organisation's capability which will be maintained on an asset register.

**3.93.** The work of the IWRG enabled the Welsh Fire and Rescue Service (WFRS) and RNLI to form an agreement to share rescue skills to save on training costs. Launched in March 2011, it is the first of its kind in the UK. At Bala Lake and the Cardiff International White Water Rafting Centre, Wales demonstrated its flood rescue capability in two live exercises as part of Exercise Watermark.

**3.94.** Feedback from the Chief Fire Officers Association (CFOA) suggested that flood rescue should be a funded statutory duty coordinated by the Fire and Rescue Service. In Lincolnshire this is already successfully governed locally through a MoU between the local resilience forum and the FRS.

**Key recommendation 26** – The review recommends that Defra should work with the Department for Communities and Local Government, the Cabinet Office and the Welsh Government to clarify how local and national flood rescue assets should be coordinated, for example statutory duty, framework, Memorandum of Understanding, etc.

**3.95.** In the event of a wide-area flood, COBR must be kept fully informed about search and rescue assets. It needs to know if life threatening situations are adequately dealt with and if there are gaps in an area's flood rescue capability.

**Recommendation 27** – The review recommends that Defra works with the Cabinet Office, the Department for Communities and Local Government, the Department for Transport, Welsh Government and the Ministry of Defence, with support from the Fire and Rescue Service, Maritime Coast Guard Agency and voluntary organisations to agree how to share information about coordinating SAR assets, for situation reporting and any role that COBR may need to play in an emergency.

## New dimension

**3.96.** New dimension is part of DCLG's Fire and Resilience project, which set out to provide equipment, training and standardised procedures for fire and rescue services in England and Wales, to deal with terrorist attacks and major environmental disasters.



Photo: Rob Munro/www.stewartcomms.com

**3.97.** During Exercise Watermark, new dimension assets were used virtually in the core play. The Fire & Rescue Service National Coordination Centre could easily coordinate and monitor new dimension assets. It tracked the

assets and resources such as High Volume Pumps (HVP) were used effectively.

**3.98.** Some of the bolt-on exercises successfully used new dimension assets which authentically tested the flood rescue procedures.

## Prioritisation of mutual aid and national assets

**3.99.** There is no framework to use to make decisions about national resources. During the east coast flooding scenario this was a problem for Kent LRF, which found that all the national assets had already been allocated. The 'first come, first served' approach does not work and we need consistent procedures to coordinate and prioritise assets to manage them successfully.

**3.100.** FRSNCC is responsible for tactically coordinating fire and rescue registered assets but there is no current mechanism for strategic co-ordination. However, during the exercise the Chief Fire Rescue Advisor (CFRA) provided strategic coordination, linked to COBR and used the National Coordination Advisory Framework (NCAF).



**3.101.** Assets that are not on the UK National Asset Register are available through schemes such as Military Aid Civil Authorities and will need strategic and tactical-level coordination. The CFRA said that it did not have the resources or the information it needed about these ‘non-declared’ assets so we need to clarify how to manage non-FRS assets.

**Key recommendation 28** – The review recommends that Defra and the Department for Communities and Local Government should work with others to develop guidance and improve responders’ understanding of how national resources and flood rescue assets should be allocated and coordinated during a flood. National level organisations and local resilience forums need to do more resource and asset planning before an incident.

### Capacity planning

**3.102.** Many different groups including UK government departments, local authorities, the Environment Agency and utility companies, were able to prove enough resource for the four days of the core exercise. They said that they would have found it difficult to provide enough resource had the exercise run 24 hours a day or over a more prolonged period of time.

**3.103.** A wide range of emergency planners and responders said that it was good to have an opportunity to test internal resource plans but it showed that the amount of resource needed is not fully understood for the impact of a severe, wide-area emergency.

**3.104.** All responders need to be able to react to flooding events of the scale described in the Cabinet Office national planning assumption by using existing resources better and by getting help from elsewhere (for example, mutual aid, foreign assistance).

**3.105.** The resource demands during Exercise Watermark need to be carefully assessed and balanced with the artificial nature of the exercise. The core exercise did not happen over a 24-hour period which would have needed more resource but some of the additional ‘bolt on’ exercises held at the same time used resources that could be available as mutual aid in a real incident.

### Media response

**3.106.** Many responders put the recommendations of Chapter 23 of the Pitt Review, ‘The role of the media,’ into action. There were a number of good examples of organisations proactively working with traditional and social media. (See Annex four *Press Teams participating in the Core of Exercise Watermark*.)

## Traditional media

**3.107.** One of the main messages in the Pitt Review was for responders to be more proactive in contacting the media and for someone to interact with and appeal to the audience live on air. This was demonstrated very well during the exercise. The Environment Agency was very vocal and available nationally, and all of their regional offices were proactive, in particular Yorkshire, North East and Anglian regions. The local resilience forums (LRFs) in Derbyshire, Kent, Suffolk, Norfolk and Essex proactively engaged. Devon and Cornwall demonstrated good practice, as they had already agreed who their senior spokesperson would be, and in Suffolk the chief constable was readily available for interview.

**3.108.** Unfortunately, many participating organisations still waited for prompts from the media rather than starting the dialogue themselves. This highlighted that media engagement is still not consistently proactive across England and Wales and during the four-day exercise, three UK government departments and two local resilience forums did not approach the media at all but only responded to direct queries.

**3.109.** Participants were concerned that losing the regional government offices could also make it harder for the LRFs to get mutual aid for communications during a crisis. A smaller pool of press officers and small communications teams means LRFs may be overwhelmed. Emergency responders and LRF communications specialists will have to help each other more in future and they will need a formal way to manage it in the same way that best practice is shared.

**3.110.** Some LRFs are starting to put mutual aid arrangements in place. One experienced local authority press officer had to deal with the real media during one of the community engagement events, so they passed the exercise role play to a press officer from another organisation. This was a good test and showed that individuals need to better understand the different Category one and two responders. LRFs need to discuss cover for media work in 'like for like' terms, for example, police press officer for police and fire service for fire service.

**Recommendation 29** – The review recommends that those involved in media briefing during an emergency should get specific training which needs to include the arrangements for mutual aid between organisations.

**3.111.** It is important for press statements to be consistent and reflect the key messages for the public. Unfortunately, the current processes for getting strategic coordination group (SCG) approval did not help get these messages out to the public quickly.

**3.112.** Feedback from the government and LRF media participants highlighted a need for SCGs to sign off press statements more quickly. One of the main reasons for delays in responding to the media was the time it took for press officers to get senior management and strategic coordinating group approval.

**3.113.** In some LRF areas, members of the police force in a strategic coordinating group, rigidly controlled the media messages. In one area, further

delays were caused by key flood warning press releases having to go through the strategic coordinating group clearance process.

**3.114.** Press officers were also concerned about the location of the multi-agency communications cell, a group of press officers from the concerned response organisations. Access to strategic coordinating group members was essential but Tactical coordination group members would guarantee quicker access to the hard facts and figures. Physical location was also important; the press officer in charge of the Suffolk communications cell said that he had excellent access to strategic coordinating group members, and the Chief Constable was available for media interviews.

**Recommendation 30** – The review recommends that local resilience forums need to establish a clear process for media communications that guarantees fast formal approval from senior management.

**3.115.** All regular press releases need to clearly highlight new information. This will make sure it stands out and journalists can quickly find it. More concise but regular releases will also help in adapting material to use on social media sites.

**3.116.** The Pitt Review recommended that the media should not put themselves at risk by standing in dangerous flowing floodwater. Most agencies took this on board and the media and public got prominent health and safety messages in press releases and from telephone warnings directed to the exercise media. The Health Protection Agency proactively gave safety messages to traditional and social media, and made sure they were included in other agencies' press releases.

#### Keeping it concise

Press releases issued by the West Yorkshire LRF media cell were a good example of clear and concise media information.

One area, after significant delays, sent out long press releases with many pages. In another area, 11 different organisations all issued separate releases. In contrast, the West Yorkshire releases gave a multi-agency two-page statement with good quality, up to date information which described:

- » the rivers affected by the latest flood warnings
- » the Met Office forecast
- » the flood warnings already in place
- » the number of properties flooded
- » where evacuations were happening and areas on standby
- » what emergency responders were doing to tackle the floods
- » Environment Agency flood warning website details
- » what flood warning levels meant

**Recommendation 31** – The review recommends that examples of good press releases are shared and used as a template for future multi-agency releases on flood incidents.

## Social media

**3.117.** During the flooding in Australia this year, emergency responders embraced social media. The State Emergency Services, the Rural Fire Service and Queensland Police have officially recommended the benefit of using sites such as Facebook and Twitter to gather live information and as a tool to warn and inform. They also think ‘mash up’ sites (a website that combines information from two or more sources) generated by the public, help to build a more detailed picture of what people need and where to target their resources. UK responders are starting to catch on but Exercise Watermark showed this is an area where we can significantly improve our warning, informing and response.

**3.118.** There were 26 government departments and local resilience forums involved in the core Exercise Watermark. Ten proactively used social media and six got partially involved. Ten did not engage at all, even when they were shown some alarming comments (see Annex four for participating press offices).

**3.119.** Some of the press offices that did engage with social media in the exercise used it in the same way as traditional media; a one-way platform for broadcasting messages. Social media allows two-way communication, providing live information to help emergency responders.

**3.120.** Social media can be seen as an ‘add on’; something to use after traditional media. This was supported by more junior, less experienced members of the media teams being assigned to social media.

**3.121.** Some press officers used social media to respond to frequently asked questions from traditional media journalists because it was quicker.

**3.122.** Out of date IT infrastructure, unable to keep up with the social media revolution, put responders at a disadvantage. Press officers had very few smart phones or home-working lap-tops and firewalls and IT policies blocked access to social media in the workplace. Responders are ‘following rather than leading’, because the public use state of the art equipment and applications to access information quickly.

**Key recommendation 32** – The review recommends that all government departments and emergency responders assess social media capability, capacity and access and think about removing any barriers so they can start to lead the way in social media conversation.

**3.123.** Social media not only impacts current events, it can shape them. There needs to be a culture change to empower staff to respond to social media. The speed of social media means that some command and control communication

structures are not flexible enough or fast enough to respond to public questions and this can undermine the authority of responders and the public's trust.

**3.124.** The growing number of useful 'mash up' sites and internet tools such as [Ushahidi](#) (crowdsource crisis information), [Twitscoop](#) (latest information on Twitter), [Addict-o-matic](#) (searches all social media sites for information) or [Trendsmap](#) (Twitter trends in real time) already exist and are cheap. We can use them to help manage social media and to spend less on resource, but only if emergency responders have access to them and are trained to use them.

**Recommendation 33** – The review recommends that emergency responders media and press officers do some basic social media training so they understand the language, strengths, weaknesses, opportunities and threats posed by social media. Training should cover practical guidance on using existing internet tools to monitor and respond to comments on Twitter etc.

**3.125.** The explosion of social media, at a time where the public sector has less resource does highlight the need for more mutual aid on communications. If mutual aid agreements are already agreed, it is easy to allocate part of a multi-agency media cell to monitoring and responding to social media, in the same way they cover TV, radio and print media.

## Community engagement

**3.126.** Exercise Watermark showed that since the Pitt Review, communities, with the support of responders, are more prepared for and aware of flood. Personal flood kits, Environment Agency practical advice and community flood plans are all available but many individuals and communities can still do more to prepare.

**3.127.** In Wales, the Environment Agency Wales' Flood Awareness Campaign for 2010-11 is already helping. This campaign promoted community and individual flood plans in communities across Wales and will continue into 2011-12. The legacy of the approach in Wales is that there are now 76 completed community flood plans. Seven have been tested and 115 are in development (August 2011 figures).

**3.128.** Communities which took part in various events organised by the National Flood Forum (NFF), Environment Agency and local authorities passed on some positive comments about their involvement in Exercise Watermark.

**3.129.** Communities have had the opportunity to share information with others, for example, at the local resilience forum community day in Oxford. Those who attended workshops in Hampshire learnt more about how agencies work together in a flood and now understand what information is available to them to help manage the risk.

**3.130.** In the south west of England, a number of communities who took part in the exercise said they feel better prepared and as a result some flood plans have been amended and improved. Comments from event organisers in the Midlands and east of England suggested communities felt reassured that arrangements were tested in peace time. They thought learning about what each agency does helped to put the emergency response into perspective.

### Case study one: Queen Camel Flood Committee, Yeovil

The Queen Camel Flood Committee held its own community exercise. Arthur Thring, chairman of the committee, explains what they tested and what they learnt.



‘Queen Camel is a small village in south east Somerset with approximately 800 residents. Parts of the village were flooded in 2000 and again in 2008, affecting ten houses and the primary school, which had 130 pupils. Several other houses came close to flooding.

We set up our flood committee 10 years ago, with the support of the Parish Council, to help householders protect their properties.

We held an exercise on 5 March 2011 to check our communication systems with:

- » Vulnerable households: to warn of impending floods
- » Voluntary helpers: to set up flood barriers and move furniture in individual houses
- » Police: to close the access roads to the village with flood barriers and to avoid heavy vehicles causing flooding with their bow waves

10 out of 10 householders and the school were warned. Nine out of 12 possible volunteers were ready and able to help and five out of six volunteers were ready to help close the roads.

These results are good but we can still improve. Residents should have reserve contacts in place, more mobile phone numbers in the contact plan (as well as landline numbers) and more equipment for road closures.

Following Exercise Watermark, we will hold a communications exercise every six months and a full simulated situation every 18 months. Householders will be encouraged to test their internal water pumps every two months, and to erect their flood barriers at least once a year.



**3.131.** Community and business packs were put together for communities to use during Exercise Watermark, but they need a tool to help them prepare for flooding long after the exercise has finished. The Environment Agency is developing Watermark packs to help test community flood plans in the future.

**3.132.** Kent County Council is using the information packs to supplement their own community emergency plan initiative. They think the pack content is excellent and they will use them to help communities in Kent to produce their own plans. This initiative is still in the planning phase but the pack will become part of their community resilience work.

**3.133.** In the last few years, the Environment Agency has done a significant amount of work to help establish risk-based community flood plans in England and Wales. For some communities, flood is an important concern but for others, who have perhaps not suffered the direct effects of flooding recently, there is work to do. Many local authorities have started to encourage parish councils to produce generic community emergency plans.

**3.134.** A consistent message from the feedback at the Exercise Watermark conference suggested community flood plans and community emergency plans could be more integrated, which would create links with communities at high risk of flooding but with no plan in place.

**Recommendation 34** – The review recommends that local resilience forums discuss to what extent community flood planning and wider community emergency planning should be integrated to help communities become more aware and prepared for flooding and other risks.

## Case study two: The Oracle shopping centre, Reading

The Oracle shopping centre in Reading is unique, because part of the River Kennet runs through it. Exercise Watermark was an ideal opportunity to exercise and review its flood response plan.



Key members of the management and operations team spent an afternoon looking at Exercise Watermark flooding scenarios from flood warnings, to full-scale flooding and loss of power. The idea was to see what action it could take to keep the centre, its staff and customers safe, protect its assets and keep in line with legislation.

The staff involved had different levels of experience, including some with over 12 years' service at the centre. Many shared their past experiences of flooding on the site, highlighting what went well and what lessons had been learned.

The team discussed the issues from previous floods, how they were dealt with and what they should do now to ensure the centre can deal with any future emergencies.

Graham Williams, Emergency Planning and Security Adviser said: 'I was really impressed with the enthusiasm and commitment with which the staff embraced this exercise. It provided us with a great opportunity to recognise the challenges that would be faced, to test and check systems, and to examine the roles and responsibilities of those concerned. It was an excellent opportunity to learn. It also enabled us to demonstrate to other emergency providers, our commitment and that we view ourselves as integral members of the wider community.'

Everything we learnt from this exercise will be used to ensure a robust flood contingency plan is in place at The Oracle.

This has proved to be a really great initiative to get involved in. Everyone contributed in a constructive manner, which in time should benefit everyone at the centre.'

### Case study three: Thames Valley LRF, working with communities

Thames Valley LRF held a hugely successful community day at the Kings Conference Centre in Oxford. More than 150 people attended, from 65 different community groups, flood groups, parish and town councils, keen to test their flood and community emergency plans through a series of challenging flooding scenarios.



The day also offered participants the opportunity to see an exhibition on local flooding information, talk to experts and swap flooding experiences with each other. Particularly popular were the practical displays at the Environment Agency depot, Osney Island.

The Environment Agency demonstrated sandbagging and building demountable defences. Oxfordshire Fire and Rescue Service gave water safety advice and demonstrated their impressive high volume pumps with exciting water rescue displays forcing a couple of unlucky fire fighters to be thrown into the very cold River Thames. Don't worry they were rescued every time!

The keynote speaker for the day was Rt. Hon Richard Benyon MP, Parliamentary Under-Secretary of State, Natural Environment and Fisheries (Defra) and Conservative MP for Newbury. He said:

'I saw many different parts of Exercise Watermark around the country but was particularly impressed with the community day organised by Thames Valley LRF. It brought together so many groups of people and was a genuine learning process for communities large and small. I congratulate all involved in this event: the Environment Agency, the emergency services, local authorities, town and parish councils and voluntary groups. They can be sure they have made thousands of local people safer from the risk of flooding and better able to deal with flooding when it happens.'

The key to the success of the day was the local resilience forum partners working together to find common content to engage the audience. The event was about communities testing and validating their plans and networking with other similar groups to share ideas and experience. Participants found it very useful to create an environment where they drove this process themselves.

They did recognise that flooding is only one risk the community might face, so generic plans with a flooding element would help to increase the community's overall resilience. The event was a chance to bring together local communities to test their plans and work together to share information and knowledge. Inviting different organisations involved in planning and responding to flooding, the community representatives could explore the widest possible range of subjects and options available to them.

## Case study four: We're prepared for coastal flooding in Lincolnshire

Exercises are not just for the benefit of emergency responders, but can involve the community too. Exercises can be useful to reassure the public, demonstrating that the emergency services are prepared, and help build community resilience.

During the storm season in the months building up to Exercise Watermark, a high-profile campaign run by Lincolnshire's Local Resilience Forum, used events, marketing tools and the media, to raise awareness of the issues and asking people to:

- » make a plan - a flood plan for your home or business and
- » make a call - register for Environment Agency Floodline Warnings Direct.

All the emergency responders worked together using one consistent message: We're prepared for Coastal Flooding in Lincolnshire - are you?

Evaluation of the campaign showed staggering results. The number of people who said they felt quite or very prepared for flooding increased from 39.7 per cent to 49.3 per cent, but importantly, the results showed that more people had actually taken action. The number of people completing a flood plan increased from 15.6 per cent to 31.3 per cent and the number registering for flood warnings increased from 34.2 per cent to 46 per cent. More people had also made up a flood kit and checked their insurance cover.

**3.135.** The National Flood Forum (NFF) received a lot of encouraging feedback from the flood groups they worked with as part of Exercise Watermark. Comments included:

*'Representatives...found the Exercise Watermark table top event very useful in formulating the...flood plan, and it was a great opportunity to try it out....We are now working to refine our plans.'*

*'The desk top exercise was well planned, educational, informative and much enjoyed.'*

*For one of the exercises, all participants marked the exercise either good or very good and considered it to be a valuable experience.*

**3.136.** Lots of the online feedback was also extremely encouraging and there were also suggestions on how communities could be more prepared. These included the following:

- » Local authorities and communities should talk more about issues like watercourse maintenance and insurance. This will involve communities and encourage them to produce a community flood plan.

- » Communities found they could improve their flood plans by reviewing the likelihood of flooding for possible access routes to rest centres and establishing a clear hierarchy for communication.
- » Communities should discuss the best way to identify and inform vulnerable groups in their community.
- » Some communities found they could improve the number, as well as the requirements of their local flood wardens. Flood action groups suggested training more wardens and recruiting additional wardens from outside the local flood zones.
- » Some communities said they now had a better understanding of the equipment held by parish and town councils. This was valuable information that could be added to their community flood plan.

**Recommendation 35** – The review recommends that communities and responders work together so local residents are more prepared by developing community flood plans or community emergency plans if they currently don't exist.

**Recommendation 36** – The review recommends that communities with a flood plan or community emergency plan should regularly review and test their plans to improve them.

## 4. Next Steps

- 4.1.** This report will be presented to Defra and Welsh Government ministers in late September 2011 to provide a cross-government response.
- 4.2.** Defra will use the Exercise Watermark final report to improve national capability to respond to a major flood emergency with the Pitt Review actions as outlined in the Defra Departmental Business Plan.
- 4.3.** Environment Agency Wales produced the Exercise Watermark – Wales report with additional recommendations for the Welsh Government. Both reports will be used to improve wider flood emergency planning.
- 4.4.** Other local and national reports and actions plans have been developed and local and national responders have identified actions to improve flood preparedness and emergency response. These actions are ongoing and will respond to any government response to this report.

# 5. Recommendations

5.1 A full list of the 36 recommendation made in this report are shown below. Eleven of these are identified as key recommendations following the Exercise Watermark Conference feedback. The review team think these 11 should be given priority, as they are likely to bring about the biggest improvements in the overall emergency response to flooding.

**Recommendation 1** – The review recommends that the Cabinet Office should communicate the roles, responsibilities and interfaces between the lead government department, Cabinet Office Briefing Room and Scientific Advise Group for Emergencies before and during an incident.

**Key recommendation 2** – The review recommends that the Cabinet Office, with other government departments, the Welsh Government and local responders needs to further consider the relationship between Cabinet Office Briefing Room, the lead government department, the Department for Communities and Local Government and local responders for incidents falling between level two (serious emergency) and level three (catastrophic emergency). More explicit triggers would signal when issues need to be escalated and clearer guidance on what that means in terms of central coordination and local direction would be useful.

**Recommendation 3** – The review recommends more regular training and exercises for those who only act as government liaison officers during an incident, to help them to understand their role and responsibilities. This should include local responders and government to make sure they also understand the role and the support government liaison officers can give at a local level.

**Recommendation 4** –The review recommends that the multi-agency teleconferences involving responder organisations along the east coast, led by the Department for Communities and the Local Government-Resilience Emergencies Division should be developed to adapt them for different types of wide area emergencies. An alternative communication mechanism should be in place in case telecoms fail.

**Key recommendation 5** – The review recommends that the wide-area planning and arrangements for flood response organisations on the east coast should be developed and adapted for different wide-area emergencies. These groups should consider producing wide-area plans or frameworks.

**Key recommendation 6** – The review recommends that the Department for Communities and Local Government, the Cabinet Office, the Welsh Government and UK government departments need to set out clear arrangements for integrating multi-area evacuation plans and national coordination; in particular, evacuation routes, shelter, communication and mutual aid arrangements.

**Recommendation 7**– The review recommends that the lead government department list should be reviewed with an explanation to clarify the UK government department policy lead for evacuation and shelter.

**Recommendation 8** – The review recommends that local resilience forums, supported by the Cabinet Office and the Department for Communities and Local Government, should share examples of good practice and peer review the evacuation plans.

**Recommendation 9** – The review recommends that local resilience forums' evacuation planning should involve Category two responders and other relevant groups, such as transport operators and the Highways Agency.

**Recommendation 10** – The review recommends that the Cabinet Office should consider including good practice examples and case studies in its evacuation and shelter guidance when it is next updated.

**Recommendation 11** – The review recommends that government department emergency response teams should engage with their department policy teams to embed national planning assumptions and impact assessments.

**Recommendation 12** – The review recommends that more responders should use existing training on Military Aid to Civil Authorities (MACA). Exercises locally and nationally should include the arrangements for activating MACA more frequently. The military should be involved to make sure everyone understands what military support may or may not be available and how to access it in an emergency.

**Recommendation 13** – The review recommends that the Environment Agency, the Flood Forecasting Centre and the Met Office should reinforce the programme to improve responders' awareness and understanding of flood forecasts, rainfall alerts, flood warnings and their possible impact.

**Recommendation 14** – The review recommends that the Environment Agency should provide clearer guidance on how the decision to issue a severe flood warning is reached, and the role of the strategic coordination group and the Environment Agency in this process.

**Recommendation 15** – The review recommends that local resilience forums should consider expanding the role and membership of scientific and technical advice cells to include technical skills relevant in a flood, (for example hydrologists, structural engineers and forecasters).

**Key recommendation 16** – The review recommends that information requirements and reporting processes during an emergency are evaluated, including how available resources can best be used to satisfy audiences at all levels. Reporting and briefing processes need to be amended to meet information requirements and reflect current arrangements.

**Key recommendation 17** – The review recommends that government should consider how to use technology better for information sharing and reporting to inform the national and local responses. Government should consider using a live, simple (mandatory) common information platform to use for mapping, digital visualisation, media and other source information.



**Key recommendation 18** – The review recommends that future exercises involving strategic coordination centres and incident rooms /operation centres should be used to further test location-specific IT and communications infrastructure. The IT issues identified from Watermark, incidents and other exercise need to be resolved. In particular issues like internet guest logins, firewalls, blackberry users and multi-agency access need solutions which can then be shared as good practice.

**Key recommendation 19** – The review recommends that the Cabinet Office reviews NRE usability and future expansion plans based on experience to date, encouraging more responders to use it.

**Key recommendation 20** – The review recommends that the Environment Agency improves its flood visualisation capabilities and consider the merits of pre-prepared flood maps for emergencies, in consultation with local and national partners.

**Recommendation 21** – The review recommends that LRFs identify data sets to help their response arrangements. They should work with the Environment Agency to make these available in a compatible format for flood mapping and visualisation services for individual local-level commands during an incident.

**Recommendation 22** – The review recommends that the Environment Agency shares flood mapping more widely during an incident, so that it is accessible in tactical coordinating groups, strategic coordinating groups and national emergency operation centres.

**Recommendation 23** – The review recommends that UK government departments and the Welsh Government need to make better use of existing mapping and imagery services for emergency planning and response.

**Recommendation 24** – The review recommends that the Cabinet Office continues to work with the Department for Communities and Local Government, the Welsh Government and relevant UK government departments to review the arrangements for utility companies' involvement in local resilience forums and strategic coordination groups etc, now government offices have closed. There needs to be a better match between the supply and demand for their expertise during incident response and recovery.

**Recommendation 25** – The review recommends that the Cabinet Office and lead government departments should engage with utility companies to improve the level of their involvement preparing for incidents. This needs to include sharing information as described in *Keeping the Country Running: Natural Hazards and Infrastructure* and multi-agency training and exercising.

**Key recommendation 26** – The review recommends that Defra should work with the Department for Communities and Local Government, the Cabinet Office and the Welsh Government to clarify how local and national flood rescue assets should be coordinated, for example statutory duty, framework, Memorandum of Understanding, etc.

**Recommendation 27** – The review recommends that Defra works with the Cabinet Office, the Department for Communities and Local Government, the Department for Transport, Welsh Government and the Ministry of Defence, with support from the Fire and Rescue Service, Maritime Coast Guard Agency and voluntary organisations to agree how to share information about coordinating SAR assets, for situation reporting and any role that COBR may need to play in an emergency.

**Key recommendation 28** – The review recommends that Defra and the Department for Communities and Local Government should work with others to develop guidance and improve responders' understanding of how national resources and flood rescue assets should be allocated and coordinated during a flood. National level organisations and local resilience forums need to do more resource and asset planning before an incident.

**Recommendation 29** – The review recommends that those involved in media briefing during an emergency should get specific training which needs to include the arrangements for mutual aid between organisations.

**Recommendation 30** – The review recommends that local resilience forums need to establish a clear process for media communications that guarantees fast formal approval from senior management.

**Recommendation 31** – The review recommends that examples of good press releases are shared and used as a template for future multi-agency releases on flood incidents.

**Key recommendation 32** – The review recommends that all government departments and emergency responders assess social media capability, capacity and access and think about removing any barriers so they can start to lead the way in social media conversation.

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