

Section 4

Being rescued and cared for in an emergency

Summary

This section discusses the frameworks underpinning the emergency response and examines how effective the response effort was at local, regional and national levels during the summer 2007 floods. It contains chapters on:

- information provision to responders;
- response frameworks;
- the local response; and
- the national response.

Information provision to responders

This chapter examines the information provided to emergency responders, the assistance provided to interpret it, and the way that it is presented. It contains sections on:

- Met Office weather warnings;
- Environment Agency flood warnings;
- interpreting weather and flood information; and
- visualisation and real-time tools.

Introduction

10.1 Clear and accurate severe weather and flood warnings issued with sufficient lead time to allow emergency responders to act effectively are vital. Evidence to the Review shows that, during the summer 2007 floods, many emergency responders found warnings did not provide all the information they needed in a readily accessible format. Furthermore, the information needs of different responders varied according to the use to which they put the information, (for example standing personnel at the ready, or installing temporary flood defences), and the information provided did not always cater for these more tailored requirements. In the UK, the Met Office is responsible for issuing weather warnings, while the Environment Agency is responsible for issuing flood warnings, other than for surface water flooding, for which there is presently no official warning system in place. The issue of surface water flood warnings is discussed in more detail later in this chapter.

Met Office weather warnings

Multi-agency recipients

10.2 The Met Office has an improving understanding of how its warnings are used by different members of the multi-agency responder community. Its Public Weather Service (PWS) advisers played a significant role in the summer flooding events, including representing the Met Office at the Cabinet Office Briefing Rooms (COBR) and at Gold Commands in affected areas, as well as providing television, radio and newspaper briefings. Severe weather warnings were distributed in advance direct to emergency response organisations via email and fax, and PWS advisers located around the country helped responders to interpret the forecast information.

New weather alert system

10.3 The Met Office now issues colour-coded weather warnings against a lower threshold of probability than was previously the case. These are available to responders and direct

to the public from the Met Office website, and alerts of severe or extreme weather are carried in forecasts issued on television and radio. 'Yellow' and 'Amber' advisory alerts provide early warnings of disruption at lower levels of probability than was the case prior to the floods of summer 2007, flagging the need for vigilance rather than immediate action. Extreme and rare weather events such as those experienced in 2007 will be distinguished from the conditions commonly associated with UK weather.

10.4 As well as providing more information to the public, the alerts better inform the emergency services of any potential disruption associated with extreme weather, including heavy rainfall, snow and gale force winds. The Review encourages the Met Office to undertake activities to ensure that the public, its professional partners and the emergency responder community understand the new system, including precautions that they should take when warnings are issued.

Environment Agency flood warnings

Multi-agency recipients

10.5 A number of emergency responders told the Review that the Environment Agency's flood warnings can be difficult to interpret. They also noted that, in some areas, Environment Agency staff who engaged with Gold Commands during the 2007 floods had a limited understanding of their role and purpose, and in some cases were unable to present their assessments clearly.

10.6 The use and the interpretation of underlying data, which is covered later in this section, will clearly be aided by Environment Agency staff who are knowledgeable about their functions and able to explain scientific material to Gold Commands, and to Local Resilience Forums. The development of visualisation tools, which is covered later in this chapter, should help significantly in providing emergency responders with a rapid summary of the likely impact of imminent flooding.

10.7 The Review is aware of a recent survey by the Environment Agency of organisations

receiving flood warnings, including Category 1 and 2 responders, which indicated that recipients prefer their information to come via multiple channels, such as fax, email, telephone and the Environment Agency's website, with fax and email being regarded as the most useful methods. In terms of the information provided in the warnings, the Review is pleased that in some areas more geographically-specific alerts are now being issued, as discussed in Chapter 21.

10.8 Research has found that local authorities and the police would welcome data indicating when flooding is most likely to recede, and whether or not there is any likelihood of immediate further flooding.¹ Such information would inform how an event is unfolding and the start of recovery activities, which involves decisions about the safety of re-deploying personnel back into a flooded area. **The Review would welcome the Environment Agency exploring with responders what level of information would be useful in this respect.**

Triggers for flood warnings

10.9 For each type of flood warning (Flood Watch, Flood Warning, Severe Flood Warning), the Environment Agency has a predetermined activation threshold, based for example on river depths and rainfall levels over a catchment area. Lower thresholds are used to initiate supporting actions, such as the staffing of incident rooms, increased monitoring of river gauges and enhanced flood forecasting activities.

10.10 The trigger for issuing a Flood Warning or Severe Flood Warning is based on the Environment Agency's assessment of whether any watercourse, or part of a watercourse, will reach a level at which the Agency judges that significant property flooding will take place. Since the trigger is usually calculated by the use of flood modelling studies or by looking at the behaviour of past floods, unexpected behaviour of rainfall or river water can diminish the accuracy of warnings. The Environment Agency found during the summer floods that, while the computer models generally proved

¹ S. McCarthy, S. Tunstall, D. Parker, H. Faulkner, J. Howe, 'Risk communication in emergency response to a simulated extreme flood', *Environmental Hazards* 7 (2007), 179–192.

satisfactory at predicting river levels, they were less accurate in predicting the timing of floods. The Environment Agency believes that this may have been due to the lack of historic data on such extreme summer floods, as many rivers rose far more quickly than during any previous flooding event.

The advance warning period

10.11 The Environment Agency's flood warning system has service standards that aim to issue warnings more than two hours ahead of potential river flooding in England – it delivers them to the public through its Floodline Warnings Direct system by a number of different media, in a range of languages. Warnings are also issued to the emergency responder community and to the broadcast media.

10.12 The lead time for warnings is almost entirely dependent on the type and behaviour of a river and the location of the flood warning area on that river; more time will be available to issue warnings of rainfall to downstream areas than those upstream near the headwaters of rivers. Thus, slower responding rivers with larger catchments can provide lead times longer than two hours.

10.13 Responders have told the Review that flood warnings are required that provide the maximum notice period possible, well in advance of those defined by the service standards. This is particularly true of utilities companies; in its submission to the Review, the Energy Networks Association (ENA) stated:

“Flood warnings are required that provide the maximum notice period possible, not simply a guaranteed minimum figure of two hours for river flooding and six hours for tidal flooding, as is generally the case at present, as it makes the use of temporary flood protection systems impractical.”

10.14 The ENA also described how a prediction of flood depth is important in determining substations at risk of flooding. Further research indicates that flood velocity and depth models would be potentially useful in

informing assessments and decisions about the risks in deciding whether to deploy personnel and in making decisions on evacuation.²

10.15 The Review is encouraged that the Environment Agency has offered to share its 'National Flooding Outlook Statement' with energy infrastructure owners to provide an indication of potential flooding for the following three to four days based on Met Office forecasts. The usefulness of warnings would be extended further if the Outlook Statement was complemented by site-specific information for infrastructure operators, including greater levels of detail about the velocity and depth of flooding – we recommend that the Environment Agency takes this forward.

RECOMMENDATION 33: The Environment Agency should provide a specialised site-specific flood warning service for infrastructure operators, offering longer lead times and greater levels of detail about the velocity and depth of flooding.

10.16 We are aware that generally the Environment Agency's Flood Incident Management teams will provide notice as far in advance as possible, but only where they are confident in doing so. In this respect, as also discussed in Chapter 21, an interim conclusion of the Review was that the Met Office and the Environment Agency should produce an assessment of the options for issuing warnings against a lower threshold of probability.

10.17 The Met Office and the Environment Agency have recently established a joint working group to consider this in more detail. Initial work by the group suggests that emergency responders would benefit from such warnings and we are informed by the Environment Agency that longer lead times for all warnings will be possible when new, probabilistic warning services currently in development are implemented.

² ibid.

RECOMMENDATION 34: The Met Office and the Environment Agency should issue warnings against a lower threshold of probability to increase preparation lead times for emergency responders.

10.18 Until such systems are fully in place, the Review believes that the rationale for issuing warnings with particular lead times, and the confidence levels underlying them, should be more clearly communicated to professional partners. This consistent approach will allow recipients of the warnings to systematically interpret the warning, assess the likely consequences within their areas of responsibility, and to take action accordingly.

Case study – East Coast tidal surge, November 2007

An early warning the previous day predicting coastal flooding allowed EDF Energy Networks to put effective planning in place and prioritise its resources:

“The advance warning allowed us to escalate our emergency arrangements, make contact with the local Environment Agency incident centre and provide them with enough detail about our sites on the coastal and river flood plains to generate a more precise risk assessment based on the heights of our substations above the expected surge flood levels. This allowed us to focus our resources on key sites and to give Gold Commands much better information.”

Surface water flood warnings

10.19 Issues surrounding surface water flooding are discussed in more detail in Chapter 4. Although there are presently no warning systems in place for surface water flooding, the Met Office, supported by the Environment Agency, is developing a system that will provide earlier flood-related weather alerts for partner agencies. This will use

existing topographical data to identify locations considered susceptible to surface water flooding. It is hoped that upgraded Met Office computers will create the capability needed for this system in 2009.

10.20 In the meantime, the Environment Agency is working with the Met Office to develop an ‘Extreme Rainfall Alert’ service (ERA) for Category 1 and 2 responders to give an early indication of severe rainfall over defined areas that could lead to surface water flooding. The pilot ERA service has been launched on a UK-wide basis for six months. The service has been developed in consultation with the ENA and is designed to provide an early indication of extreme rainfall and the implied risk of surface water flooding. The potential value of this pilot will be enhanced with the release of the Environment Agency’s indicative surface water ‘hot spots’, as discussed further in Chapter 4, which will assist emergency responders in prioritising their response efforts.

Interpreting weather and flood information

10.21 The Review notes that the Government’s Chief Fire and Rescue Adviser’s (CFRA) report³ into the Fire and Rescue Service’s role during the floods described how differences in interpretation, presentation and consistency of information between Environment Agency and Met Office information were experienced by some Fire and Rescue Authorities (FRA). One FRA reported that:

“...there was some initial difficulty in interpreting the different information sets provided by the Met Office and the Environment Agency. This was attributed to the different mapping system used by the Environment Agency when compared with that of the Met Office and that used by the Fire and Rescue Service. The effectiveness of the information was dependent on the end-user being able to collate and interpret the individual data sets correctly.”

³ www.communities.gov.uk/publications/fire/floodingreview

10.22 In general, FRAs felt that they could have reacted to flood events more effectively if the information provided by the Met Office and the Environment Agency had been provided in a more consistent and understandable format. They also noted that the lack of information about tributaries made prediction of flooding events more difficult.

10.23 Following discussions with other stakeholders it became apparent to the CFRA that the interpretation of flood data went wider than evaluating Environment Agency and Met Office information only, and that it is necessary to evaluate flood risk information in a broader context. For example, some interviewees in the CFRA's report indicated that they needed to understand local drainage systems better in order to remove water effectively. Others reported that coordination with the various authorities with responsibilities for the drainage infrastructure was difficult. It was generally felt that closer liaison with local bodies with drainage responsibilities, the Met Office, Environment Agency and other Category 1 and 2 responders, would help to create more effective risk analysis for flooding. One FRA stated:

"This issue [the provision of information] was not as acute [here] as in other areas. As all agencies were located in the County Emergency Centre we could discuss the implication of predicted rainfall and drainage between the Environment Agency, the water [company] and internal drainage board, and local authority engineers. Having all key agencies in one room was vital in making sense of forecasts that cover broad areas to plan for effects on local rivers and drainage systems."

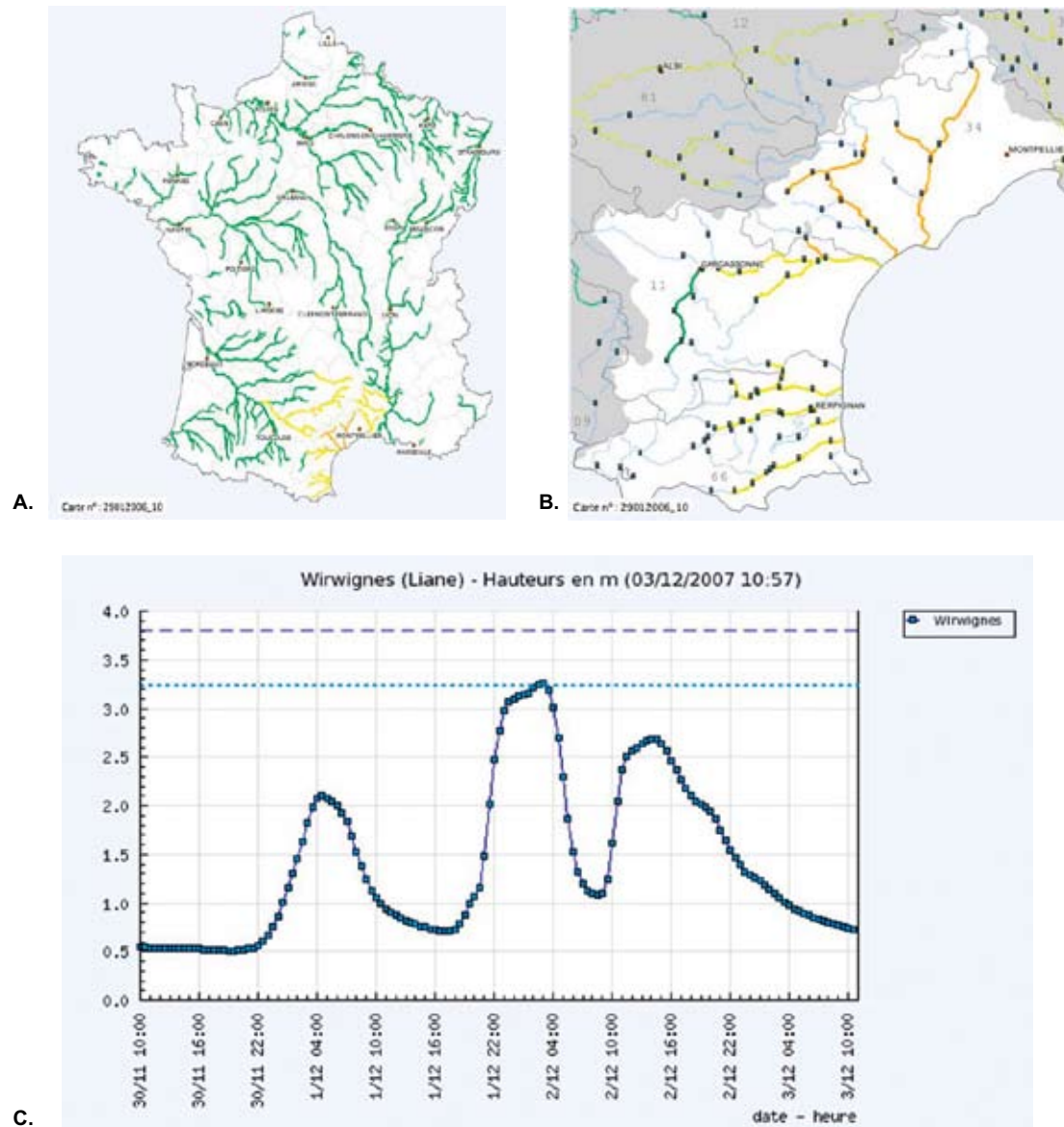
10.24 The findings of the Environment Agency's review following the summer 2007 floods support responders' views that information provided by the Met Office and the Environment Agency on weather conditions and river levels was difficult to interpret unaided. Although interpretation assistance is often provided by the Met Office and the Environment Agency, this cannot be guaranteed in all cases and therefore information which can be readily interpreted by non-experts is desirable.

10.25 The Environment Agency's review indicated that the Agency would conduct a review of its professional partners' specific needs, so that the Agency and the Met Office can provide forecasts and warnings that mean action can be taken more easily. The Agency also stated that, together with the Met Office, it would look at the best way of presenting and explaining weather forecasts and flood warnings so that professional partners and the public better understand them.

10.26 **The Review welcomes this commitment to closer working and cooperation and urges the Environment Agency and the Met Office to continue to develop these arrangements, so that consistent and joined-up weather and flood warnings and potential impacts can be provided to emergency responders in the event of future emergencies.**

RECOMMENDATION 35: The Met Office and the Environment Agency should issue joint warnings and impact information on severe weather and flooding emergencies to responder organisations and the public.

Flood-risk visualisation in France⁴



SCHAPI⁵, France's National Hydrometeorological and Flood Forecasting service, publishes visual flood-risk information in the form of a national map (A) showing river systems colour-coded according to their status (green river systems signify that no particular vigilance is presently required, while an escalated warning level is signified by amber or red). Regions (B) can be viewed by clicking on the map and this also reveals the sites of automatic river level monitors, for which associated depth/flow data in the form of graphs is available (C). In this way, members of the public and emergency responders can actively observe trends in river levels as well as receiving warnings, leading to greater levels of awareness and confidence.

⁴ www.vigicrues.ecologie.gouv.fr/

⁵ Service Central d'Hydrométéorologie et d'Appui à la Prévision des Inondations (Central Service for Hydrometeorology and Flood Forecasting). Images reproduced with the kind permission of the French Ministry of Sustainable Development.

Visualisation and real-time tools

10.27 Local authorities and the police have to cope with large amounts of fast-moving and technical information relating to the scale of a flood during an emergency. In such dynamic environments, the timing, speed and method of communication is crucial and standard reporting formats assist in these respects. However, there is no consistent approach across the country to the way that this information is presented, which can depend on the facilities available, and this leads in some cases to a relatively 'low-tech', ad-hoc approach.

10.28 Flooding is a spatial phenomenon and can affect a number of areas concurrently. Continuous visual information (rather than table-based information received by fax or email) makes it much easier to get an understanding of how a flooding event is unfolding – especially when a large area is affected. In this respect, the Thames Regional Flood Defence Committee encouraged data provision that was less text-based and that used more model and map-based information:

“... much of the information that needs to be exchanged and used is naturally map-based (e.g. maps showing the distribution of key infrastructure and topography, vulnerable communities and assets, flood-risk areas, and a real distribution of rainfall and flood extent – both current and forecast) and therefore amenable to be displayed as layers on a GIS (Geographic Information System).”

10.29 Further, a number of submissions to the Review, including those of local authorities and the police, highlighted the need to have real-time (or near real-time) flood visualisation tools available to enable emergency responders to react to and manage fast-moving events, and to target their limited resources at the highest-priority areas. In this respect, the Association of Drainage Authorities stated in their submission:

“An easy to use GIS that can be effectively updated with timings, levels and extent of flooding during a flood event would certainly be a useful system to keep Gold and Silver Commands informed.”

10.30 Modern technology, using electronic information and mapping that is already available at some control rooms operated by the Met Office and the Environment Agency, can provide some of this visual information and should be made more widely available to other responders.

10.31 A future means of sharing data from different organisations will be via the National Resilience Extranet (NRE) currently under development by the Cabinet Office and Communities and Local Government. The NRE will provide a resilient browser-based tool to enable efficient and secure exchange of information during both routine planning and emergency response. The Review has been informed that there will be a pilot of the NRE in selected local authorities during 2008, with the full roll-out expected in 2009. In the meantime, we believe that much of the current visual data held by the Environment Agency could be utilised in the short term by other responders if software were shared, or if the data could be exchanged via secure electronic links in a similar way to the Met Office's browser-based tool presently in development, as discussed below.

RECOMMENDATION 36: The Environment Agency should make relevant flood visualisation data, held in electronic map format, available online to Gold and Silver Commands.

10.32 One example of a visualisation tool that should be shared with responders is a map-based programme to record flooded locations, which is currently held in incident rooms in some Environment Agency regional offices. This information is built up from reports from on-the-ground staff and members of the public.

10.33 Another example of a visualisation tool used by the Environment Agency that would be useful to responders more widely is Light Detection and Ranging (LIDAR), an airborne mapping technique that uses a laser to measure the distance between an aircraft and the ground. This technique is usually used to produce a terrain map suitable for assessing flood risk. However, it can also be

used to show the extent of flooding in real time. Following limited use of LIDAR in the floods of 2007, the Review is encouraged to hear that the Environment Agency has now developed its capabilities and would be able to utilise this technique to a greater extent during future floods.

10.34 A further example of a visualisation tool is the GIS-based Flood Vulnerability Map (FVM), recently developed by the Environment Agency. This tool allows the possible social impacts of floods to be assessed, facilitating targeted warning by responders when flooding is likely. The system indicates vulnerability within an area, using Census information, and indicates graphically the type of land use in an area and the location of, for example, hospitals, schools, care homes, sites of hazardous materials, roads, camp sites, general practitioners and nurseries. Although static FVM maps can be shared with responders via fax or email, it would be useful if responders were able to interact with the system in their own command centres, displaying and overlaying different data points on screen and on demand. The Review believes the Environment Agency should do further work on the FVM to improve its accuracy and coverage and to enable the electronic maps to be shared.

The development of new visualisation tools

10.35 The Review welcomes a Met Office programme to provide a browser-based service to Gold Commands so that they are able to view the same information as the Met Office Public Weather Service Advisers, while receiving parallel interpretation advice. The system is planned to provide, amongst other data, rain forecasts, rainfall radar and real-time rain gauge data. Future upgrades may include GIS capability. Following user testing with the responder community, the new service is expected to be rolled-out towards the end of 2008.

10.36 In light of the evidence it has received, the Review believes that further flood visualisation tools should be developed to meet the needs of flood-risk managers, and emergency planners and responders. These tools should be developed in conjunction with those who will be using them and should be produced in a format that is compatible with the systems that are currently used by emergency responders. For example, the Local Government Association (LGA) has specified that these tools should ideally be developed in a GIS format, and should be able to link up with incident management systems, such as 'Atlas', which are used by many local authorities. However, the LGA highlighted the need to avoid using stand-alone computers where possible to avoid systems running in parallel.

RECOMMENDATION 37: The Environment Agency should work with its partners to progressively develop and bring into use flood visualisation tools that are designed to meet the needs of flood-risk managers, emergency planners and responders.

10.37 Advanced visualisation tools will, to some degree, be contingent on the Gold and Silver Commands' respective IT facilities, and the Review recommends in Chapter 12 that these facilities should be reviewed and upgraded as necessary.





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Response frameworks

This chapter examines arrangements underpinning the response to wide-area emergencies. It contains sections on:

- the acquisition of emergency supplies;
- mutual aid;
- flood rescue; and
- emergency water provision.

The acquisition of emergency supplies

Introduction

11.1 Weaknesses in arrangements for the provision of emergency supplies by emergency responders were seen in the aftermath of the 2007 floods. While the arrangements put in place to carry out this task were broadly successful, their ad-hoc nature meant that supplies were often sourced later than was desirable. The scale and urgency of the situation in the South West led to a substantial contribution by the Armed Forces to the logistical operations and this is discussed in Chapter 12.

Emergency supplies in the 2007 floods

11.2 The most extreme example of supply problems involved the delivery of drinking water to 350,000 people in Gloucestershire who had lost their mains supply, generating an urgent demand for consumables such as bottled

water, hygienic wipes and sanitation supplies, and means of distributing them. The urgency of the situation resulted in Gloucestershire Gold Command, central government departments and central crisis machinery – the Cabinet Office Briefing Rooms (COBR) – becoming involved in logistics sourcing and distribution, despite there being no established procedures for this.

11.3 Some private sector companies, including supermarkets, bridged this gap to a large degree through the provision of supplies for those affected, drawing on their established distribution networks. However, there is little reassurance that such methods could be relied upon in future incidents. In particular, the goodwill of suppliers in donating goods should not be taken for granted. The role of the private sector, including the key role played by voluntary organisations following the loss of the Mythe Water Treatment Works, is covered in more detail later in this chapter.

11.4 Evidence submitted to the Review included a number of comments from responders, primarily police, local authorities and central government, about the difficulties faced in sourcing essential supplies and equipment. For example, the Ministry of Defence (MoD) said that:

“Early in the crisis, it was apparent that Gloucester Gold Command was unable to resource critically important stocks (such as portable toilets and WAG bags [sanitation equipment]) from within the region and swiftly procured the national reserve of these stocks. Had the flooding caused more critical impact on other regions simultaneously, it was clear that these resources would then have been unavailable for a considerable time period.”

11.5 In addition, the Chief Constable of Gloucestershire Constabulary stated that:

“...there must be increased capacity to supply basic needs to communities in the event of an emergency...the county needs to increase its capacity to supply utilities, feed communities and supply other basic needs...there needs to be a strategic reserve of light, heat and sanitation across the country for use in the event of an emergency.”

11.6 A local authority also appeared to favour a central reserve:

“...a central supply system would be useful but we already have in place a number of on-call contracts for temporary mortuaries, transport, feeding, standby power, decontamination and water supply as well as clean-up after flooding contamination.”

11.7 However, a submission from a police constabulary stated there was no need for reserves:

“... [there is] no need for UK reserves of sanitation/food/water/fuel – supermarkets can supply via their distribution networks.”

Acquiring supplies: a range of solutions

11.8 To gain more information about sourcing emergency supplies, the interim report recommended that the Cabinet Office, with other departments, should urgently consider the costs, benefits and feasibility of establishing arrangements for the urgent acquisition of supplies during a major emergency, including the use of ‘call-off contracts’ or the creation of national or regional stockpiles of equipment and consumables.

11.9 The Review is aware that this recommendation is being taken forward by the Cabinet Office, who, as part of work to provide guidance, undertook a stand-alone survey of public, private and voluntary sector organisations to establish to what extent stockpiling, if at all, is used at present. The survey identified what essential supplies and equipment were needed and from whom, in what quantities, and how quickly they could be obtained.

11.10 The results of the survey showed that the range and quantities of existing supplies is extensive and comprises: sandbags; portable toilets; baby food and nappies; tents and temporary shelters; medical supplies and staff; food; cooking equipment; sterilising equipment for water and utensils; bottled water; water bowzers; blankets and warm clothing, including waterproofs; power generators; emergency lighting and power cables; diesel, petrol, LPG and oil; satellite phones; buses and public transport; inflatable dinghies and life jackets; buckets, shovels and flood barriers; 4x4 and specialist rescue vehicles; radios and batteries; and high-capacity water pumps.

11.11 However, the survey gave an aggregate picture and the work has also identified that within local authorities, as a general rule, stockpiles of essential supplies held ready for use during an emergency do not exist widely, particularly in large volumes. However, items can often be quickly sourced direct from suppliers at a local or regional level through existing distribution networks, and some local authorities are very well-organised for this eventuality, maintaining resource databases including the items needed, suppliers, quantities held and the time taken to supply them.

11.12 The Cabinet Office has since prepared draft guidance in response to the survey, which considers the possible options for acquiring supplies, including traditional stockpiling (that is, physically held stockpiles of particular items), call-off contracts and the use of supplies held in the community (see text box). This guidance is expected to be issued at both the regional and local level in the second half of 2008 after the National Capabilities Survey¹ has concluded.

11.13 Following submissions to the Review, we believe that how emergency supplies are acquired is dependent on the items in question, particularly whether they are consumable (and therefore not returned after use) or non-consumable. Some of the key factors to be considered in determining the most appropriate acquisition mechanisms appear to be:

- the extent to which the items are available on the open market from existing suppliers, including issues such as the availability of items at different times of year, over weekends and outside normal business hours;
- the extent to which items are available in large volumes within relevant timescales;
- the extent to which items can be distributed efficiently and quickly; and
- whether the market is able to supply 'surge capacity' to a number of recipients at short notice.

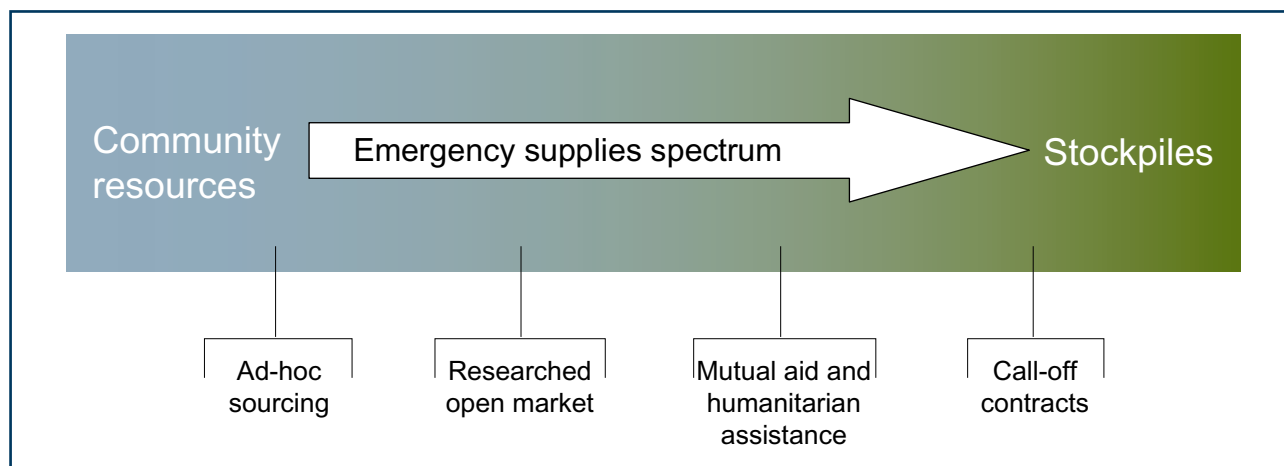
Spectrum of options for acquiring emergency supplies

A spectrum of options can be used to acquire emergency supplies or equipment including:

- **communities, individuals, businesses and schools**, which may have certain supplies and equipment, whether cached in personal stockpiles for use in an emergency or for everyday use – examples are tools, blankets, water, food and clothing;
- **ad-hoc sourcing from the open market**, as used during the floods of summer 2007 – however, this approach lacks certainty and should be the last resort;
- **planned sourcing from the open market** – where prior research gives reassurance that the items could be provided on demand using existing distribution networks;
- **mutual aid arrangements** at a local, regional or national level, including humanitarian aid provided by voluntary organisations;
- **'call-off contracts'** that typically either incorporate a commitment to purchase a particular volume or value of goods or services, or can set the terms and conditions that would apply if goods or services are purchased; and
- **stockpiles**, which can provide certainty of supply in an emergency but can be expensive once warehousing, maintenance, deterioration and transportation are taken into account.

¹ The National Capabilities Survey is part of the Government's programme to make the country more resilient to disruptive events, by providing an assessment of current levels of national resilience to inform national policies and prioritisation of investment in resilience. Conducted every other year, the Survey gathers information from a wide range of resilience stakeholders, in several different sectors and at all levels of resilience planning, to provide an up-to-date picture of preparedness, and to help plan improvements. www.ukresilience.gov.uk/preparedness/ukgovernment/survey.aspx

Figure 8: Emergency supplies spectrum



11.14 Stockpiles established before an emergency are one option for acquiring supplies. However, this option is not always appropriate. Supplies, such as food and bottled water, may have a limited shelf-life and would deteriorate in warehouses over time if not used. Therefore alternative options for acquiring supplies, such as community reserves, humanitarian assistance and contracts to supply goods on demand, should be considered.

11.15 The method used will depend on a number of factors, including the perishability of the item, ease of sourcing and the anticipated frequency of use, as outlined above. For example, storing large numbers of portable toilets for very occasional use would seem unrealistic, and mobilising and servicing them would also be extremely difficult. Established networks and systems to procure some items from different sources and hiring other items, complete with transportation and contracted service backup from large event organisers used to such challenges, would appear to be preferable.

11.16 In view of the forthcoming guidance from the Cabinet Office, the Review does not make a recommendation with respect to whether stockpiles should be established locally or nationally. However, it is clear that any decisions on making arrangements to acquire supplies in advance of or during an emergency should be risk-based, taking account of the

likelihood and impacts of risks set out in the proposed National Risk Register and the respective local Community Risk Register.²

Mutual aid

Introduction

11.17 During the summer of 2007, mutual aid arrangements enabled organisations engaged in the emergency response to request urgent support from other parts of the country. Many examples of effective assistance were observed in the form of loans of equipment, such as pumps or boats, and personnel. Expertise was provided either on location or at a distance, for example when scarce expertise was required by a number of areas at once. Mutual aid is also discussed elsewhere in this chapter with respect to flood rescue and emergency water provision.

Examples of mutual aid arrangements

The emergency services

11.18 Well-established and effective arrangements already exist for the provision of mutual aid between police forces, with all requests for assistance routed through and coordinated by the Police National Information Coordination Centre in London. Arrangements also exist in the Fire and Rescue Service, administered through the combined efforts of its National Coordination Centre in West Yorkshire, the Communities and Local Government's Emergency Information Support Group in London,³ and the Flood Support Team, based in Worcester.

² An assessment of the risks within a local resilience area agreed by the Local Resilience Forum as a basis for supporting the preparation of emergency plans.

³ Now renamed the Communities and Local Government Emergency Room (Fire and Rescue).

11.19 The provision, mobilisation and effectiveness of high-volume water pumps under mutual aid during the 2007 floods were widely praised by local fire and rescue service officers. In his review⁴ of the Fire and Rescue Service's (FRS) response to the floods, the Government's Chief Fire and Rescue Adviser (CFRA), explained how some Fire and Rescue Authorities (FRAs) expanded the scope of their work to include providing reassurance and general assistance to their communities. There were good examples of mutual aid between FRAs in this wider community engagement work and wherever this work was carried out it was highly praised by local politicians and the wider community. The Review agrees, however, with the CFRA's conclusion that it is necessary to clarify and communicate the role of the FRS's mutual aid bodies and the extent of their respective responsibilities. There is further discussion of the role of the FRS later in this chapter, with respect to flood rescue.

The Environment Agency

11.20 Mutual aid was also used by the Environment Agency, which lent staff inter-regionally to assist other offices. The widespread nature of the flooding meant that some adjacent Environment Agency regions were affected and arrangements were set up to bring staff in from across the country. The Review is aware that these procedures are now under review, to plan for future events with the intensity and duration of the unprecedented events of the summer. This review will examine individual roles and responsibilities, the need for further training and the exercising of the Environment Agency's response.

The British Red Cross

11.21 Another organisation with well-established mutual aid arrangements is the British Red Cross. The summer floods were the first instance where each of its 21 UK regional offices was involved in providing or receiving mutual aid. Their mutual aid arrangements proved particularly effective because all area emergency response managers were already aware of the capability that they could draw on from other parts of the country. As well as

mutual aid between its UK offices, the British Red Cross can call on mutual aid from other Red Cross national societies in the European Union if it proves necessary. During summer 2007, aid was offered from elsewhere in the UK in the form of boats and trained crews as well as a water sanitation unit. In addition, support from the organisation's International Division was provided in the form of logistics capability and vehicles.

Uncoordinated mutual aid

11.22 Beyond the cited examples, however, there are few structured arrangements for mutual aid. Where it does happen, it is usually ad-hoc and inconsistent. Evidence submitted to the Review suggests that in a few cases ad-hoc mutual aid arrangements worked well during the floods of summer 2007. In these examples, good communication between those involved meant that resources were able to be loaned upon request and were received in a timely manner.

11.23 Others reported that when their agency had been called upon to help in the emergency, their personnel were poorly integrated into the response effort. People working in Silver Commands rotated frequently with little consistency or knowledge transfer and at times it seemed that the command structures did not know how to make best use of the additional personnel.

11.24 The Review considers it vitally important that Local Resilience Forums have clarity not just about local capabilities but about those available through mutual aid schemes at a regional and national level. We agree with a comment made by the Chair of the Chief Fire Officers' Association (CFOA) Inland Water Strategic Group in his submission to the Review:

"...uncoordinated mutual aid arrangements would quickly be exposed during an actual emergency, as water does not respect individual authority or regional boundaries. Different levels of response to different sections of the same flood event would rightly be deemed unacceptable."

⁴ www.communities.gov.uk/publications/fire/floodingreview

Local authorities and mutual aid

11.25 Local authorities have a proven track record of responding swiftly and effectively to incidents and emergencies that affect the communities they serve. All local authorities have plans in place that enable them to do this, and most will exercise and practise their response on a regular basis. The 2007 flooding incidents, however, demonstrated that even for the best-prepared of authorities, a point can be reached where it becomes difficult, if not impossible, for a local authority acting alone to sustain its emergency response effort.

11.26 Where pre-planned mutual aid arrangements are in place, local authorities generally rely on neighbouring authorities to provide support with equipment and personnel. However, the wide range of potential roles can make it difficult to identify the right people with the appropriate skills to assist during an emergency. Moreover, during summer 2007, many local authorities found that they could not rely on assistance from neighbouring authorities, either because they too were affected by floods or because they felt the need to retain the resources available to them in the event of the emergency situation escalating and affecting their area. Furthermore, shared inventories of equipment were not available, so local authorities were unaware what help neighbouring authorities might be able to provide. However, where mutual aid did occur, the help and support from other councils was singularly important to the affected areas.

11.27 It is inevitable that wide-area emergencies will occur in the future, especially in view of climate change predictions. Therefore, the importance of local authorities being prepared for such events by having more structured arrangements for mutual aid will become increasingly significant.

New guidance on mutual aid for local authorities

11.28 In its submission to the Review, and in subsequent discussions, the Local Government Association (LGA) acknowledged that national and cross-regional mutual aid arrangements between local authorities could be improved,

for example by the development of a register of experts available to assist the response to a future wide-area emergency.

11.29 The Review welcomes the fact that the LGA and the Cabinet Office are taking forward work to develop guidance for local authorities on mutual aid. We understand that the guidance will recommend some basic principles of effective mutual aid and also seek to address some of the perceived and real difficulties which some contributors to the Review have seen as potential barriers to improved collaboration.

11.30 The Review is aware that research for this guidance has revealed examples of good practice in a number of local authorities, for example the arrangements in place in Northumberland, Norfolk, Cambridgeshire, Lincolnshire, Suffolk, Essex and Merseyside, as well as those between North London authorities and the adjoining counties of Essex, Cambridgeshire, Buckinghamshire and Bedfordshire. These arrangements provide that any assistance provided will be paid for by the requesting authority, which will also assume full responsibility for the health, safety and welfare needs of the staff deployed to assist. A number of local authorities have identified a lead officer responsible for dealing with mutual aid requests.

11.31 Without pre-empting the content of the forthcoming guidance, which is due for issue later this year, the Review has heard a number of suggestions for enhancing mutual aid arrangements. **The Review would welcome the LGA and the Cabinet Office considering these suggestions in developing the guidance to local authorities.** These are set out below:

- i) During the floods, many local authorities found that they could not rely on assistance from neighbouring authorities either because they were also affected by floods or because they feared being affected. In the light of this, mutual aid should be considered not only from adjoining regions but also from regions further afield, perhaps including from Scotland, Wales and Northern Ireland, as appropriate.

- ii) It should be an inevitable prerequisite of responding positively to a request for mutual aid that the responding authority does not believe that its own services will be diminished below an acceptable level. In addition, when setting up mutual aid arrangements, existing agreements entered into by all parties should be considered so that a level of excess capability (redundancy) exists, in case many mutual aid arrangements are enacted during large pan-regional incidents.
- iii) Reimbursement arrangements for mutual aid should be agreed in advance of incidents occurring. However, where this is not the case, assistance should be provided straightaway and costs recovered later. A decision as to who would pay for the deployment of assets should also be agreed ahead of a likely incident.
- iv) Where equipment is loaned to mutual aid partners, systems to record and track these assets will be required, even if the terms of the agreement allow for the equipment to be kept by the recipient upon payment or replacement on a like-for-like basis.
- v) Mutual aid agreements might be based on the systematic consideration of different emergency scenarios, described in community or regional risk registers, for example a flood across three neighbouring regions affecting a defined number of people.
- vi) Plans should consider mutual aid agreements between different types of organisation rather than remaining within a sector, for example between humanitarian organisations and local authorities.

RECOMMENDATION 38: Local authorities should establish mutual aid agreements in accordance with the guidance currently being prepared by the Local Government Association and the Cabinet Office.

Flood rescue

Introduction

11.32 The interim report praised the role of many organisations carrying out flood rescue in the summer, including the FRS, the Maritime and Coastguard Agency (MCA), the Royal National Lifeboat Institution (RNLI) and the Armed Forces. Subsequent evidence submitted to the Review also highlighted the valuable role of other voluntary search and rescue organisations such as Rapid UK, Severn Area Rescue Association and Avon and Somerset Search and Rescue. Voluntary organisations were sometimes first on the scene and added significantly to the response efforts. All of these organisations are highly valued by the public and were praised for their dedication and contribution.

11.33 However, a lack of clarity about who was responsible for carrying out and coordinating flood rescue placed both the public and responders at unnecessary risk. Timeliness and the effectiveness of the response were diminished since there were no common systems of work or understanding of command, control and risk. Further, a number of voluntary search and rescue organisations experienced difficulty in engaging with the response effort. As discussed further in Chapter 3, climate change is likely to lead to floods becoming both more frequent and more severe in the future – the response capability for major floods, including coordination arrangements and resources, needs to be enhanced to reflect this.

11.34 During the course of the Review, we have received a number of submissions from a wide range of organisations on the issue of flood rescue, including: the Association of Chief Police Officers; the MCA; the RNLI; the CFA; the Fire Brigades Union (FBU); the British Red Cross; voluntary search and rescue organisations (including mountain and cave rescue teams); independent fire and marine consultants; and the Government's CFRA. These submissions, amongst other evidence, inform this section of the chapter.

Multi-agency search and rescue

11.35 The organisation of search and rescue activities in the UK is an amalgam of separate government departments, the emergency services and other organisations. A number of charities and voluntary organisations dedicated to search and rescue also play a significant role.⁵ During the summer 2007 floods, rescue teams from these different organisations came together from across the UK.

Coordination of the Fire and Rescue Service

11.36 A large proportion of flood search and rescue activities were carried out by the FRS during the 2007 floods and the coordination of their resources mobilised to assist the affected areas was dealt with by the combined efforts of a range of organisations:

- the Communities and Local Government (CLG) Emergency Information Support Group in London;
- the FRS National Coordination Centre in West Yorkshire;
- the CFOA Flood Support Team in Worcester, an ad-hoc arrangement established during the initial floods; and
- CFOA lead officers.

11.37 There was widespread agreement among stakeholders that the arrangements had worked well in the circumstances. However, given the multiplicity of coordinating organisations, responders were often unclear about the role of each of the organisations and who was taking the strategic lead. This led to delays in the response and frustration on the ground in fast-moving and stressful circumstances.

11.38 Stakeholders agreed that it was necessary to clarify and communicate the role of each of these bodies and the extent of their respective responsibilities. In relation to the roles of these bodies, the report⁶ by the Government's CFRA, which examined the FRS response to the summer 2007 floods, stated:

"Those involved [in the national coordination] have, however, acknowledged that there is room for improvement in the light of experience gained. The main issue requiring clarification is to confirm who determines the overall use of national assets and in what circumstances."

And further:

"The apparent lack of clarity on the respective coordination functions means that stakeholders are unclear on which of the bodies has the lead in determining strategy."

11.39 The Review believes that clarifying and communicating the role of each of these bodies, as recommended by the CFRA, would improve the response to flooding, however, we are concerned that the systems, structures and protocols developed to support national coordination of multi-agency flood rescue assets remain ad-hoc. Further, we believe that no cohesive national overview of flood rescue exists in the absence of an organisation having a lead role in major flooding events.

Engagement with other emergency response organisations

11.40 While the FRS carried out a large proportion of flood search and rescue during the summer, they formed only one part of the overall response. The MCA also contributed to the combined response, as did a number of voluntary organisations such as the RNLI, Rapid UK, Severn Area Rescue Association, Somerset and Avon Search and Rescue and the Royal Society for the Prevention of Cruelty to Animals (RSPCA).

11.41 Despite the contributions that they made, many of these organisations informed the Review that on occasions they struggled to become involved in the response. For example, despite numerous calls offering assistance, the MCA was not initially requested to join the multi-agency response to flooding in the

⁵ Search and Rescue Framework for the United Kingdom of Great Britain and Northern Ireland (April 2008). www.mcga.gov.uk/c4mca/ukgov.pdf

⁶ *Facing the Challenge* – the Chief Fire and Rescue Adviser's review of the operational response by the Fire and Rescue Service to the widespread flooding in England during 2007 (17 March 2008). www.communities.gov.uk/publications/fire/floodingreview

South West. Similarly, the RNLI's support in Hull and South Yorkshire was not requested until six days into the flooding, despite their attempts to become involved from the outset. Although lessons had been learned by the time of the flooding in July in the South West, and the RNLI was put on standby, a lack of clarity in giving them the formal instruction to attend meant that their ready-to-go resource sat waiting for 24 hours and as a consequence was delayed further in traffic congestion caused by the flooding. The RNLI has since written to all chief constables, chief fire officers and local authority principal emergency planning officers advising them of the extent of the RNLI's capability for flood rescue and the terms on which support can be provided.

11.42 The British Red Cross also commented to the Review on the issue of flood rescue:

"There was a particular issue around the absence of a clear lead for inland water rescue that may explain the absence of a request to utilise our swift water rescue service; it remains unclear which organisation has responsibility for tasking inland water rescue."

11.43 Given the difficulty that these large national organisations experienced in engaging with co-responders, it is little wonder that smaller specialised, local voluntary organisations found it even harder to engage. A mountain rescue organisation described to the Review how they routinely undertake search and rescue incidents involving the search for missing persons, transporting casualties, and in many cases 'swift water' incidents. The wish to be involved, and the frustration in not being tasked, is clear:

"You have at your disposal a fantastically capable and dedicated resource that would cost you nothing to use, except the effort to engage with us at a national and local level."

11.44 Even where volunteers were incorporated into the response effort, some felt that they were not properly supported and received little recognition afterwards. One such volunteer told us:

"We had all been swimming in the flood water for many hours, and all our equipment and vehicles were contaminated, and some people were feeling unwell as a consequence. We repeatedly called for 'post-incident help', including decontamination. We were told this assistance would be forthcoming. Unfortunately, we never received any help of this nature, and on being stood down from the incident, my team were dispatched back to their homes with no formal help, decontamination, or immediate incident review."

11.45 The Review believes that the problems in engagement encountered by these organisations are partly symptomatic of a lack of awareness locally of the capabilities on offer. This view is backed up by responses to the urgent recommendation in the Review's interim report, which required all Local Resilience Forums (LRFs) to conduct a flood rescue capability review of their current local arrangements for flood rescue and to consider whether they were adequate in light of the 2007 floods and their local community risk registers. Responses to this exercise, and feedback during the process, indicated that the capabilities of organisations outside the FRS were often not considered.

11.46 The perceived reluctance to involve some volunteers in the combined response may also be due to the lack of a national, commonly recognised accreditation system, and the Review believes that this would be difficult to put in place without the coordination and control of flood rescue being clarified.

11.47 We strongly urge LRFs to ensure that they understand the range of expertise and capability that organisations (whether local or national) can provide in response to flood-related emergencies and build this provision into their emergency plans accordingly. Gold Commands should similarly utilise these valuable resources, where appropriate.

11.48 In this respect, the Review endorses the comment in the CFRA's report, which stated:

"It is incumbent on the LRFs to establish clearly, as part of their plans to meet the flood risk, the specific roles carried out by the various responders, recognising the expertise offered by the different organisations in their area. The Regional Resilience Forums should consider the plans of the LRFs in the context of a wider area flood and the coordination of an effective response."

11.49 However, evidence to the Review shows that the ad-hoc nature of coordination and control arrangements and the absence of an organisation with a lead role with respect to flood rescue led to confusion on the ground. An illustration of this was provided by the Chair of the CFOA Inland Water Strategic Group in a submission to the Review, an extract of which stated:

"When the initial floods hit last year a number of volunteers working alongside fire fighters got into significant difficulty. [Subsequently] I discovered that the [volunteers] involved had assumed that the fire service had a duty and would know what they were doing. Equally, the fire service personnel had assumed that the [volunteers] would have been trained in 'water working' and so thought it was safe to continue working. In the event, neither set of staff were adequately trained or equipped for the job they were undertaking and did not recognise the inherent risks they were taking. This is just a single example of the current confusion."

11.50 This confusion, along with difficulties around the strategic engagement of voluntary sector search and rescue organisations, leads the Review to believe that during future wide-area flooding events, there is a real risk that flood rescue will not be suitably coordinated and the voluntary sector could again become involved in the local response almost on a 'first come, first served' basis, leaving the wider regional or national response effort exposed.

Flood rescue capabilities

11.51 Flood rescue capabilities are the resources necessary to carry out flood rescue, and include trained personnel, boats and personal protective equipment (PPE). As such, they are vital components for effective flood rescue. These capabilities are held locally by the FRS and other search and rescue organisations.

Local capabilities

11.52 The flood rescue capabilities needed in a local area are determined by multi-agency responders at LRFs. These responders have a duty under the Civil Contingencies Act 2004 (CCA) to consider whether current flood rescue arrangements are adequate to address the risks in their community risk registers, and then to address them appropriately, for example by providing training and procuring boats and equipment. As a Category 1 responder, Fire and Rescue Authorities (FRAs) are actively involved in this capability assessment of the LRFs in their area.

11.53 In the interim report, the Review recommended that all LRFs conduct a flood rescue capability review, urgently reviewing their current local arrangements for flood rescue, to consider whether they were adequate in light of the 2007 floods and their local community risk registers. This recommendation required each LRF to assess its flooding risk and its response capability, including resources held by FRAs and voluntary organisations. One output of this process was a register of flood rescue boats and equipment in each area. In response to the Review's recommendation, one LRF wrote:

"It is the opinion of the group that it will not be possible to draw up a register [of flood rescue boats] until (a) the statutory responsibility for inland water rescue has been suitably allocated; and (b) central government provides clear guidance on the necessary training, competencies and experience of those boat operators that would be either expected to form or – in the case of volunteers – willing to become a part of, a structured inland water rescue capacity...to add a rescue craft to any register without an accredited

level of capability, both in terms of the boat itself and the skills and experience of the crew, would clearly not be possible when considering the health, safety and welfare duties owed to that crew by the tasking agency.”

11.54 A similar view was expressed at conferences held by the Review in each of the nine English regions and in submissions to the Review from a number of LRFs. The main concern raised was that to effectively assess widespread flooding risks in their own areas, multi-agency responders at LRFs must understand the operational challenges arising from flood rescues, and it is not clear in all cases that responders have the strategic knowledge and skills to carry out this role effectively. It was asserted that without the Government, or an organisation with a lead role for flood response, defining what capabilities would be necessary to respond to flood emergencies, the LRFs would not necessarily be able to tell if the capabilities that they had were suitable. In light of these concerns, some clarification was provided to LRFs by the CFRA, and the LRFs were then able to assess their capabilities in a more informed manner.

11.55 Responses to the recommendation in the interim report seen by the Review show that LRFs have been reviewing their current local arrangements for flood rescue and the flood rescue capability reviews have now been completed. Through this work, there is a real sense that LRFs are examining the strengths and limitations of local flood rescue capability, and are drawing up realistic plans accordingly. However, these plans are often limited, with differences in capability observed across areas of similar flood risk.

11.56 Representations to the Review cite a variety of reasons for the differences in capability: the lack of a statutory duty on any organisation to carry out flood rescue; the absence of definitive advice as to suitable capabilities to respond to a given flood risk; the considerable overlap of responsibilities in relation to flooding and the lack of clarity over

who has a lead role in major flooding events; an absence of funding, or differences in funding structures, for equipment and training; and the absence of a formal national scheme for mutual aid in flood emergencies. Notably, there are no national standards for equipment and training or guidance for responders to work from.

National capabilities

11.57 It should be noted that LRFs are only required to consider risks in their local area and that there is no requirement to plan for any larger regional or national emergencies, including wide-area flooding. The exception to this is for emergencies utilising specialist equipment (known as ‘New Dimension’⁷ assets), for example high-volume pumps and decontamination equipment, for which the additional capability is provided centrally to respond to a wide range of emergencies.

11.58 Accordingly, the flood rescue capability review carried out by LRFs in response to the recommendation in the interim report showed that the current provision of boats, PPE and training is predominantly for local rescue, not for the greater scale of response required for multiple rescues in wide-area flooding events.

11.59 With regard to PPE, submissions to the Review appear to mirror those cited in the CFRA’s report in recounting how FRS personnel worked in difficult conditions, often using PPE designed for routine fire-fighting duties, or for infrequent, short-duration incidents in rivers, lakes and canals rather than an interoperable response. We have heard first-hand how fire and rescue personnel deployed in normal fire fighting PPE rapidly became wet, cold and risked contamination by flood water.

11.60 It appears that, in the event of another wide-area flooding emergency, those responding would still not necessarily have the right resources or training to respond safely. Furthermore, any mutual aid enacted without a wider strategic overview could leave other areas exposed. In a wide-area flooding emergency, more resources would be needed than those

⁷ The Government’s New Dimension programme provides the FRS with supplies and equipment to enhance its capability to respond to a range of incidents, including: chemical, biological, radiological and nuclear incidents; industrial and domestic accidents; chemical spills and collapsed buildings; natural disasters; and floods and earthquakes.

currently held locally and these would need to be underpinned by effective strategic mutual aid arrangements, rather than the ad-hoc arrangements observed in summer 2007.

11.61 In a submission to the Review, the Chair of the CFOA Inland Water Strategic Group stated that:

“Floods are by their nature multi-agency, multi-jurisdictional events, hence need surety and mutual aid.” and:

“From a purely FRS perspective, it is vitally important that an LRF has clarity not just about local level FRS capabilities, but those available through mutual-aid schemes at a regional and national level. In addition to being unprofessional, uncoordinated mutual-aid arrangements would quickly be exposed during an actual emergency, as water does not respect individual authority or regional boundaries. Different levels of response to different sections of the same flood event would rightly be deemed unacceptable.” and further:

“We have a tremendous flood rescue capability, but it is inconsistent, and we lack the capacity to respond to major events.”

11.62 Further evidence of the need for increased capabilities in relation to the FRS is provided in the CFRA's report, which found

“...widespread agreement amongst respondents that the current capability of the FRS was inadequate to meet either national planning scenarios or events on the scale of summer 2007.”

11.63 The Review is aware that the Government accepts that more resources are needed to respond effectively to wide-area flooding. In light of this, Defra, the lead government department for flooding, is considering the degree to which the sum of local resources identified from the LRF flood rescue capability review fulfils the national requirements to cope with widespread flooding.

11.64 In submissions to the Review, stakeholders have cautioned that, in carrying out its assessment of the additional capabilities required, Defra should be mindful that if each area is equipped to deal with its own widespread flooding there could be overcapacity, and therefore there needs to be a careful balance between local and national capability and a fit-for-purpose mutual aid regime. The CFOA has also stated in a submission to the Review that capabilities should also be diverse, with an appropriate mix of specialised resources, for example powered rigid inflatable boats and simpler, non-powered ridged hulled boats and inflatable rafts for towing.

11.65 Further, when assessing the quantum of additional flood rescue capabilities needed, Defra should consider evidence to the Review from voluntary search and rescue organisations, one of which stated:

“Most people who were at risk in the flood waters, actually ‘self rescued’, or benefited from a minimum of outside, third-party, assistance. Most of the contact we had with people who were at risk, either in vehicles or in their homes, only required a minimum of assistance to gain a place of safety. We certainly ‘rescued’ many people whose lives were in immediate danger, but we also assisted many more, to a place of safety. To call this work ‘rescue’ is grossly overstating the case, yet many organisations have claimed to be undertaking ‘rescues’, many days later, when risk levels were much reduced.”

11.66 Early government estimates suggest that there are approximately 70 boats in England and Wales suitable for flood rescue currently held by various local responders, including the FRS, MCA and RNLI, and that an additional 80 boats located across England and Wales, with associated personnel and equipment, would be needed to respond to future wide-area floods (based on a ‘worst case’ scenario). **The Review would welcome the Government procuring the additional resources identified at the earliest possible opportunity, having regard to the need for a diversity of resources as well as issues relating to interoperability and national standards for equipment, which are discussed below.**

National standards for equipment and training

11.67 Many search and rescue organisations worked together during the floods and, once engaged, this interaction was usually effective. However, working together was hindered and time was wasted where equipment and ways of working were not readily interoperable.

11.68 Evidence of this is provided by a recent interview with Captain Hugh Fogarty, the RNLI's Head of Fleet Operations in *Monitor*, the publication of the Royal United Services Institute for Defence and Security Studies:

"The RNLI has a standard that applies whether you're in the Republic of Ireland, Scotland, the Isle of Man, the Channel Islands or anywhere else in the UK. We can take a man from Orkney, put him down in the Isles of Scilly and he'll find the same kit and the same training standards. But if you move from one county to another, the same is not always true of the fire service or police and this can have a huge impact on crew working under pressure... If they have to deal with a different engine type or a different control system, they could spend half their time trying to operate the gear rather than just doing the job."

11.69 Further evidence of inconsistencies is provided by the flood rescue capability review conducted by LRFs, which, as discussed earlier, highlighted different approaches to training and different equipment. These inconsistencies arose not only between different categories of responder organisation, but also within categories, for instance between different FRAs.

11.70 With respect to flood rescue boats and equipment, evidence submitted to the Review illustrates the role of 'team typing' in facilitating mutual aid arrangements between teams from the FRS's across the country as well as other organisations involved in search and rescue activities. 'Team typing' is a system of categorising rescue teams, allowing them to be identified and selected based on the outcome they are able to achieve safely, rather than through a simple description of the organisation they represent or the equipment they carry. For

example, in categorising a team with boats, considerations might include the numbers of people who can be safely carried in the craft, rather than its make or size. The team is further categorised depending on its capability to carry out search operations in particular conditions, such as in still or flowing water. Team typing is applied in the UK but only on an ad-hoc basis.

11.71 In this respect, the CFOA commented:

"Successful resolution of any major event would require the seamless coordination of the FRS and voluntary sector specialist water rescue assets at a local and national level. The CFOA-developed 'team typing' system has already proven itself in this regard and has been accepted in principle by the RNLI and all other major voluntary service providers."

11.72 The CFRA's report also acknowledged the role of team typing:

"... in the longer term a more resilient and interoperable response is likely to be achieved using the team typing and training standards similar to those being developed by the CFOA."

11.73 However, evidence to the Review shows that a national team typing arrangement for flood rescue assets would require a clear multi-agency management framework within which to operate. This framework would need to contain a clear set of criteria and definitions for classification, along with an accreditation system so that assets can be properly classified, rated and registered.

11.74 In terms of training, search and rescue organisations inform us that robust protocols for searching in flood water would need to be drawn up and included in any standards. One voluntary search and rescue organisation stated:

"We are accustomed to working under strict 'search' protocols, for missing people on dry land, and these have been built up over a number of years, calling on a vast pool of experience. However, nothing similar exists for searching in flood water."

11.75 The Review would welcome the UK Search and Rescue Committee, chaired by the Department for Transport, examining the need for search protocols in flood water and providing guidance to responders as appropriate.

11.76 Based on the evidence, the Review believes that national standards for equipment and training and the national implementation of team typing would facilitate different local capabilities being 'plugged in' seamlessly to the regional or national response during wide-area flooding. Standards would also facilitate the accreditation of volunteers, thereby making their engagement easier. However, the Review believes that it would be difficult to agree and enforce national standards for equipment and training without the coordination and control of flood rescue being clarified.

Clarifying coordination and control

11.77 So far in this section, the Review has described the additional capabilities needed to enhance local resources to cope with a wide-area flooding event. We have also highlighted how, to fully utilise these resources, effective mutual aid, along with associated strategic coordination and control and interoperability of equipment, are necessary. However, it has become clear that in the absence of a lead organisation for flood rescue, such coordination and control on a national basis does not currently exist. Instead, in its place, there is uncertainty.

11.78 This issue was summarised in a letter to the Review by the Rt Hon Alan Johnson, Member of Parliament for Kingston West and Hesse, which stated:

"[one] of the most important observations that I believe my constituents would want me to make [is] the absence of any clear advice to the emergency services as to who should take command when flooding occurs inland...the emergency services have already made it very clear that they feel this ambiguity restricts their ability to deal with situations such as the floods in June."

The current legal framework

11.79 Fire and rescue services invariably attend to flood situations and incidents requiring rescue from water, as personnel are trained to work safely near water and are provided with a range of equipment to assist people in difficulty in water. However, there is no statutory duty on FRAs in existing legislation⁸ that requires the FRS to rescue people from water, irrespective of whether the cause of the emergency is flooding or other activities which lead to a water-related incident.

11.80 A range of other search and rescue agencies, for example the MCA and the RNLI, are also appropriately equipped for limited deployment for inland water and flood rescue. Although the MCA is a Category 1 responder under the Civil Contingencies Act 2004 for rescues at sea, on the coast and in estuaries, and the MCA and RNLI have a joint statutory duty on the River Thames, neither organisation has a legal responsibility for inland flood rescue. Similarly, no other voluntary search and rescue organisations have flood-specific duties.

11.81 There is no flood rescue duty on FRAs under the Fire and Rescue Services Act 2004, although each FRA has 'permissive' powers to take action it considers appropriate in the event of flooding. As a result, many FRAs use LRF assessments to make provision for boats, PPE and training in order to be able to respond to isolated water rescue incidents, such as people falling into rivers and canals, and local flooding incidents. This is facilitated by Integrated Risk Management Plans (IRMPs), which are developed by each FRA and set out the FRA's assessment of local risks to life. The FRA identifies how its resources should be deployed to tackle these risks and improve the safety of local people. However, as observed during the 2007 floods, the effectiveness of arrangements under IRMPs can vary locally between FRAs, and this inhibits areas working together effectively during wide-area emergencies.

11.82 In Scotland, where the legislative framework for flood rescue is different to that in England and Wales, an amendment to the Fire (Scotland) Act 2005 imposed a duty on fire and

⁸ Fire and Rescue Services Act 2004; Civil Contingencies Act 2004.

rescue authorities to provide rescue in response to serious flooding events. The Review has been advised by the Scottish Executive that this duty has helped, to some extent, to clarify roles and set standards for training, kit and competency. However, it is currently subject to a review to define the roles that responders are increasingly being asked to undertake in respect of inland water rescues, many of which occur outside serious flood events.

A statutory duty for flood rescue

11.83 One frequently proposed method of providing certainty on flood rescue is the introduction of a statutory duty for flood rescue. It should be noted that, while the interim report did not ask explicitly whether a statutory duty was necessary, subsequent representations to the Review in favour of such a duty have been numerous and forthright. In contrast, representations against a duty have been scarce. At conferences held by the Review in each of the nine English regions, multi-agency attendees expressing a view were overwhelmingly in favour of a statutory duty for flood rescue. A similar view was expressed at Regional Resilience Forums attended by the Review team.

11.84 Furthermore, chief fire officers who have expressed an opinion told the Review that there was a clear need for a statutory duty on the FRS for flood rescue. In respect of a statutory duty, the CFA commented:

“The way forward in delivering an efficient, resilient and cost-effective national response to major flooding events must surely be based on a clear statement of duties and specifically the duties of FRAs – as well as [Communities and Local Government] and other key Departments – in delivering agreed levels of service provision and standards of competence from within a robust quality and command and control framework. In particular, the CFA needs to be assured that whatever arrangements might be put in place would be efficient, effective, safe and resilient, and would remain so for the foreseeable future.”

11.85 And similarly, in its submission to the Review, the FBU stated:

“After the experience of the summer 2007 floods, the FBU believes that the case for imposing a statutory duty for major floods is overwhelming. The public expects fire service personnel to respond in an emergency situation and fire service personnel, with our training and expertise, expect to participate in rescue efforts. Imposing a duty, as long as it is backed by the necessary resources, will help the fire and rescue service prepare for the next floods.”

11.86 There were, however, arguments against a statutory duty for flood rescue; the CFRA, stated in his report that a statutory duty was not the best means to solve the observed problems:

“A statutory duty does not, in itself, ensure interoperability and commonality of equipment, training and competence. After listening to a range of views from stakeholders I have considered the matter carefully and concluded that the issue is not one of legislative change but instead one that relies on making available the necessary capability (boats, equipment and training) to enable an effective national response from the FRS.”

11.87 In addition, three other submissions to the Review expressed concerns about a statutory duty: one search and rescue responder said that payment considerations during floods could delay the response, particularly on the part of non-FRS responders if such a duty was placed on FRAs (although the same person also said that a good argument for a duty was to provide clarity with regard to the lead organisation for flood rescue); and two other responders suggested that a duty might reduce the flexibility of the response that volunteer rescue organisations could provide.

11.88 While most of the representations we have received have been in favour of a statutory duty, the Review believes that the way forward should not be determined solely on a statistical basis, formed from the

weight of responses. It is equally a matter of the fundamental principles underpinning this Review (although in this instance the principles are mirrored by the evidence), which is to give clear and unambiguous direction – giving certainty where there is doubt – that the systems currently in place, or those otherwise proposed, will provide the desired outcome. We must be clear about who does what to ensure that people and organisations are held to account, structures are simple and outcomes are more certain.

RECOMMENDATION 39: The Government should urgently put in place a fully funded national capability for flood rescue, with Fire and Rescue Authorities playing a leading role, underpinned, as necessary, by a statutory duty.

11.89 The Review strongly believes that a statutory duty is the best means to achieve these outcomes. Whilst it is conceivable that non-statutory approaches, such as those proposed by the CFRA, might work, such approaches do not provide the certainty the public expect and the Review believes is needed. This is especially true when the evidence from the summer 2007 floods and the East Coast tidal surge of November 2007 have shown that, many lives may depend on an effective search and rescue response in future wide-area flooding, and when climate change is likely to lead to floods becoming both more frequent and more severe.

11.90 The Review agrees with the CFRA's view that a statutory duty does not, *in itself*, ensure interoperability and commonality of equipment, training and competence. However, a statutory duty would provide the foundation on which these factors could be built, based upon certainty of coordination and accountability. With a statutory duty, the FRS could nationally facilitate, and indeed direct, the development of standards and accreditation and could advise on suitable capabilities with authority. A duty-holding FRA would become the focal point for flood planning and response, disseminating and marshalling expertise from all multi-agency partners, including the voluntary sector. During a wide-area flooding emergency, coordinated

strategic mutual aid underpinned by a duty will also allow best use to be made of national assets. Importantly, a statutory duty would also provide the public with clarity about roles and responsibilities during flood events.

11.91 The Review is aware that the CFRA perceives that one disadvantage of imposing a statutory duty on FRAs is the timeframe required for such a legislative change. We are sympathetic to this view. However the Review believes that certainty into the future should not be sacrificed for rapid solutions. If the duty were included in any amendments as part of the current review of the CCA, if appropriate, this could be a relatively quick procedure. In the meantime, immediate mitigating actions can be put in place to reduce the risk while a duty is framed, and in this respect we are reassured that a combination of the lessons learned from the floods of summer 2007, the East Coast tidal surge of November 2007, increased awareness, and the analysis from the LRFs flood rescue capability review, should provide increased confidence to emergency responders and communities alike.

11.92 The response to the flood events of summer 2007 suggests that FRAs are best placed to hold any statutory duty. However, the Review nonetheless examined the range of organisations that a statutory duty could be placed upon before deciding upon FRAs. We are convinced that FRAs are best suited to a statutory duty because of their already extensive experience of flood rescue and the scale of their coverage nationwide. This is a view backed up by the CFOA's submission to the Review, which stated:

"Although other search and rescue organisations all play a significant role in flood search and rescue, these agencies would not appear to have the scale or coverage to provide the command and coordination needed for a major event. If any of these bodies or agencies were to be given sole duties for inland response, they would need to create from scratch a local response infrastructure and a UK-wide planning and command element to contribute to each LRF. It is difficult to see how this could be achieved in a practical or cost effective way."

11.93 Despite the Review strongly believing that any statutory duty for flood rescue should be placed upon FRAs, the Review's firm intention is that the police should continue to lead the multi-agency response at Gold Commands, as recommended in Chapter 12, with the organisation holding any statutory duty for flood rescue assuming the role of tactical adviser to Gold Commands.

Considerations in taking forward any statutory duty

11.94 The Review acknowledges that the detailed content of a statutory duty would need to be worked through carefully and a number of different and complex factors would need to be considered and addressed. In this regard, although the Review would not intend to be prescriptive, a number of issues raised by stakeholders are worthy of emphasising below, for consideration by the Government.

11.95 The Review does not make recommendations on whether any statutory duty should extend to incidents beyond flooding which may necessitate rescue from water, for example in response to inland boating incidents. However, the Review believes that responsibility for such incidents should be considered, drawing on experience from Scotland as appropriate.

11.96 Some stakeholders have informed the Review of a perceived risk that a statutory duty on FRAs would lead to a diminution of voluntary sector involvement and that other search and rescue organisations may face pressures to reduce their existing capabilities. However, on this matter, the CFOA stated in a submission to the Review:

"Our experience and evidence to date suggest the opposite. We believe that with an inclusive approach and clear leadership, the voluntary sector can be encouraged to maintain and develop their specialist rescue capabilities. The key advantages [include] voluntary agencies having certainty about how they will be utilised in the event of a major flood and a single point of contact for national coordination. With a single body providing community leadership in this area, smaller voluntary

bodies will have access to professional advice and guidance on issues such as equipment, PPE and training standards."

11.97 In implementing any duty, the Review strongly believes that the contribution of other search and rescue organisations to flood events should be maintained, with an expectation placed on FRAs to pay full regard to the services which already exist in LRF areas. Furthermore, particularly in light of the contributions of other organisations, FRAs should not unduly invest. Capabilities should be fit for purpose but should not be 'gold-plated'.

11.98 We have also heard the concern that other search and rescue organisations may choose to 'charge' any organisation holding a duty for their contributions to a rescue effort. We have no evidence to suggest that other organisations would charge in this way, and in fact one organisation told us categorically that it would not. However, this issue would need to be addressed during consultation with all search and rescue organisations ahead of any duty being drafted. Much care would also be needed in the drafting of any duty, to ensure that fair costs fell to appropriate parties under agreed rules of engagement during a flooding event. With these concerns in mind, we would urge the Government to consult fully with all search and rescue organisations.

Underwater rescue provision

11.99 On 25 June 2007, Michael Barnett became entrapped in a flooded drain and, despite the tireless efforts of emergency responders, he succumbed to hypothermia and died.

11.100 In a letter copied to the Review, HM Coroner for East Riding and Kingston upon Hull requested that the implications of this incident for underwater rescue were reviewed. The Review acknowledges this request and notes that the CFRA's report agreed to consider the coroner's comments in more detail in consultation with the other emergency services and to review what reasonable rescue methods and/or agencies might be appropriate in similar circumstances, and to report on the findings at a later stage.

11.101 Accordingly, the Review does not make recommendations in this respect. However, in arriving at this decision it has sought the opinion of a number of experts in emergency medical care and extrication to ensure that there are no immediate lessons to be learned that could mitigate in similar circumstances. We regret that we have not been made aware of any.

The coordination of search and rescue air assets

11.102 Major incidents can generate a nationwide need for air support across regional boundaries to move specialist personnel, equipment or the injured. Such requests for helicopter assistance, particularly in overland major incidents, can originate from multiple sources. Capabilities between regions and between each aircraft platform can differ significantly.

11.103 The safe and efficient employment of multiple air assets at a major incident therefore requires a high level of aviation expertise within the coordination authority. There is clear need for high-quality advice on safe routing, airspace restrictions, support requirements and weather. Such coordination requires expertise and a robust ground-to-air communications network.

11.104 In the interim report, the Review agreed to examine the advantages of establishing a single search and rescue emergency response coordinating authority for land-based emergencies, rather than the present system coordinated by the MoD, the MCA and the police.

11.105 The Royal Air Force submitted to the Review that a single search and rescue emergency response coordinating authority for land-based emergencies would be beneficial, and suggested that the current UK Aeronautical Rescue Coordination Centre should become the coordinating authority for a national air asset response to a major incident. However, evidence to the Review on this matter is insufficient to ascertain whether there is a problem, or the best way forward. **However, in any work in this area, the Review would welcome the Government considering the experiences of the summer 2007 floods.**

Emergency water provision

Introduction

11.106 The loss of Mythe water treatment works, when it was submerged by rising flood water on 22 July 2007, represented the most significant loss of essential services since the Second World War, leaving some 350,000 people without mains water for more than two weeks. This section details the substantial operation undertaken to provide alternative water supplies.

11.107 Mythe water treatment works, operated by Severn Trent Water, is located near to Tewkesbury in Gloucestershire, on the bank of the River Severn close to the confluence with the River Avon. It supplies approximately 160,000 properties in the towns of Cheltenham, Gloucester, Tewkesbury and in a large part of rural Gloucestershire.

11.108 On Sunday 22 July 2007, the facility at Mythe was submerged by rising flood water and a controlled shutdown commenced. Prior to this, Severn Trent Water was able to transfer some areas of Gloucester to an alternative source of supply, maintaining mains water to around 20,000 homes throughout the incident. However, by Monday 23 July, approximately 70,000 properties in the Tewkesbury and Gloucester areas had been affected and were without mains water. By Tuesday 24 July, the number of properties affected had increased to around 140,000 and included the Cheltenham area.

11.109 With support from a range of organisations, Severn Trent Water was able to provide emergency water supplies to those affected during the emergency. The restoration of mains water supply to customers was implemented in phases from 28 July, with supply to all 140,000 properties restored by 2 August and finally declared fit to drink on 7 August.

11.110 In considering this issue, the Review has had regard to the findings of other reviews and investigations, which have been conducted by a number of organisations following the loss of the Mythe water treatment works. These include:

- Severn Trent Water,⁹ the privately owned water utility company that owns and operates the facility at Mythe;
- Water UK,¹⁰ the industry association that represents UK water supply companies;
- the Consumer Council for Water¹¹ (CC Water), the industry watchdog, set up to represent customers of water and sewerage companies in England and Wales;
- The Drinking Water Inspectorate¹² (DWI), which regulates public water supplies in England and Wales and is responsible for assessing the quality of drinking water, taking enforcement action if standards are not being met, and appropriate action when water is unfit for human consumption;
- Ofwat,¹³ the economic regulator of the water and sewerage sector; and
- local authority inquiry reports, for example that of Gloucestershire County Council.

The emergency response following the loss of Mythe water treatment works

11.111 From submissions to the Review it is clear that the loss of Mythe represented a very significant challenge to Severn Trent Water's capacity to cope with demand. Indeed, the scale of the supply and distribution challenge was far greater than had been planned for in the company's contingency plans. In their report following the incident, Severn Trent Water acknowledged:

"We have never experienced an incident of this magnitude. Our crisis management procedures were not designed to manage a civil contingency of this scale. It is fair to say that we found it extremely challenging to scale up our response to the extent required within the first 48 hours."

11.112 The Review recognises that, after these initial challenges had been addressed, Severn

Trent Water was able to deliver an alternative supply of drinking water (via bowzers, tankers and bottled water) to those affected. However, this was only possible with significant logistical and operational support from a range of organisations, including other water companies, the Armed Forces, the emergency services, the private sector, local authorities and the voluntary sector. Support provided was wide-ranging and included logistical operations and supply chain expertise, the use of personnel, vehicles, equipment, distribution centres and the provision of emergency supplies.

11.113 To ensure that affected customers were provided with an alternative water supply, Severn Trent Water, in addition to mobilising their own supply of bowzers, contacted other water companies and invoked established mutual aid arrangements to procure additional bowzers. These arrangements provide for the resources held by the water industry as a whole to be made available at any time to a specific water company in an emergency. The scheme was fully activated following the loss of Mythe water treatment works and involved both bowzers and tankers being supplied by other water companies as well as by a range of private sector organisations.

11.114 Using the expertise of an Armed Forces logistics team based within Gold Command in Gloucestershire, the deployment of bowzers was arranged to a number of pre-determined locations. Initially, this involved 100 bowzers being deployed in the first 24 hours, and 300 within 36 hours; it rose to over 900 on Wednesday 25 July. At the peak of the incident, in excess of 1,400 bowzers were deployed to over 1,100 locations. Armed Forces logistics expertise proved invaluable in advising on the siting and replenishing of bowzers, which was carried out up to three times a day by a series of tankers, including some tankers provided by the Armed Forces.

⁹ *The Impact of the July Floods on the Water Infrastructure and Customer Service*. Severn Trent Water, 2007, www.stwater.co.uk/redirect.php?dir=upload&doc=The_Final_Gloucester_2007_Report.pdf&docType=pdf

¹⁰ *Lessons Learned from Summer Floods 2007, Phase 1 report – Emergency Response*, Water UK's Review Group on Flooding, February 2008. www.floodforum.org.uk/waterukreviewgrouponfloodingphase1.pdf

¹¹ CC Water, Response to Loss of Water Supply, September 2007. www.ccwater.org.uk/upload/doc/Final.doc

¹² DWI Incident Assessment Letter to Severn Trent Water (14 March 2008). www.dwi.gov.uk/pressrel/2008/pr0108.shtm

¹³ OFWAT, Water and sewerage services during the summer 2007 floods (December 2007). [www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/AttachmentsByTitle/flood07_review131207.pdf/\\$FILE/flood07_review131207.pdf](http://www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/AttachmentsByTitle/flood07_review131207.pdf/$FILE/flood07_review131207.pdf)

11.115 An extensive logistics operation for the sourcing and distribution of bottled water was also established. On the morning of Sunday 22 July (the day that mains water was lost), arrangements were put in place to deliver one million litres of bottled water each day to a logistics centre at Cheltenham racecourse, which had been set up by the Armed Forces logistics team operating within Gold Command. By Monday 23 July, 900,000 litres had been delivered to the racecourse, as well as direct to a number of distribution points established across the region. In response to high demand, additional supplies were sourced, peaking at six million litres on 27 July. Additional logistics centres were also established to service the high demand for bottled water.

11.116 In addition to the efforts of the Armed Forces following the loss of Mythe water treatment works, which is covered in more detail in Chapter 12, significant contributions to the emergency response effort were made by the private and voluntary sectors. Tesco, for example, worked very closely with Severn Trent Water and other responders to supply an average of 2.5 million litres of water per day across the region during the emergency. The company used its distribution centres and supply chain networks (both road and rail modes) to support the sourcing and distribution of bottled water during the emergency. In line with some other retailers, Tesco also distributed tens of thousands of litres of bottled water to local people direct from its stores.

11.117 The voluntary sector also played a key role in the response effort. For example, the British Red Cross supported the response through the procurement and distribution of water, food and hygiene packs to households in and around Gloucestershire. In total, the organisation assisted over 8,000 people, delivered over 335,000 litres of bottled water as well as thousands of food parcels, hygiene kits and dry toilet packs.

11.118 The reaction to the loss of Mythe highlighted the crucial role that private and voluntary sector organisations can play in providing the logistical expertise and capacity needed to support the response to emergency situations. The Review believes

that this role should be adequately reflected in Cabinet Office guidance for local and regional responders, which is being prepared for issue in the second half of 2008, on options for acquiring emergency supplies, as discussed earlier in this chapter.

11.119 The Review pays tribute to the dedication, commitment and professionalism of all the people and organisations involved in the response following the loss of the facility at Mythe. It is, however, inevitable that in an event of this nature and magnitude, there will be lessons to be learned for building better contingency plans. The Review considers that there are valuable lessons to be learned in the areas of the deployment and security of bowsers; the provision of water to vulnerable people; the provision of information and advice (including health advice) to the public; and the amount of drinking-quality water that should be provided. These are covered in more detail in the rest of this chapter.

The deployment of bowsers

11.120 Severn Trent Water, like other water companies, already stored a supply of bowsers for use in emergencies throughout their region. However, bowsers tended not to be stored in a ready-to-use state and required cleaning, disinfecting and filling before they could be deployed. Water UK stated that *“it could take 24–48 hours to fully clean, drain and sample bowsers before use.”* This resulted in an unnecessary delay in deploying bowsers to the areas where they were needed.

11.121 The DWI, in their Incident Assessment Letter to Severn Trent Water, suggested that the company *“worked with the rest of the water industry to ensure that it can achieve best practice relating to stocking of bowsers in a ready-to-use state.”*

11.122 Water UK’s report also reflected this view and recommended that *“water companies...should ensure that this equipment is kept in a roadworthy and clean condition at all times to ensure that response times to emergency events are kept to a minimum.”*

11.123 The Review is aware that within the water industry, there are a number of

alternative approaches to facilitating the stocking of pre-cleaned bowzers, so that they can be rapidly deployed in an emergency. The Review urges the water industry to progress this matter without delay.

Mutual aid

11.124 Water UK's report highlighted a number of other areas where the industry's mutual aid scheme could be improved. In particular:

- **The compatibility of bowzers and other equipment** – as tankers and bowzers were brought in from across the UK, there were problems of incompatibility among the range of different makes, components and ages of the equipment supplied, particularly of bowzers. In particular, there is no standard specification for bowser and tanker couplings such as fittings, level indicators and security mechanisms. This resulted in problems with deploying and filling bowzers.
- **The provision of appropriately-sized tankers** – there was a shortage of appropriate tankers, particularly mid-sized tankers, available to the industry. Mid-sized tankers are particularly useful for filling smaller static bowzers in urban areas and for entering sites that can only be accessed by narrow or restricted roads. Bowser locations are planned by water companies based on distance from consumers. Water companies need to review their intended location for bowzers and ensure that suitable tankers are available to allow replenishment. Operational planning needs to ensure that only appropriately sized tankers are deployed to certain locations.
- **The provision of personnel** – the mutual aid scheme needs extending to include a protocol for enabling and managing the provision of personnel from supporting water companies, as well as equipment. This should cover operational staff and supervisors, call centre staff, communications and media staff, as well as technicians and tanker drivers. It should clarify chains of command, communication links, and to whom such staff report.

11.125 Water UK's report also recommended, in relation to the industry's mutual aid scheme, that:

"...a review of the state of preparedness of the industry for future events, in particular the industry's mutual aid scheme, should be undertaken...to ensure the technical compatibility of assets, the number and readiness of such assets, the means of deploying and managing staff and the resilience of the scheme to cater for such events",

"...the standardisation of emergency supply equipment to ensure...equipment from other companies or organisations is compatible" and

"water companies should rehearse emergency plans on a regular basis..."

11.126 The Review notes that Ofwat's report also recommended that the industry's mutual aid scheme should be reviewed, with input from all stakeholders. **The Review welcomes these recommendations and urges the industry to progress these aspects urgently, incorporating them into contingency plans as appropriate.**

The location and filling of bowzers

11.127 The Review notes that Severn Trent Water acknowledged problems in refilling bowzers at the rate demanded by consumers during the initial 48 hours. While Severn Trent Water improved the supply of water throughout the first seven days – as highlighted in Ofwat's report – the research conducted by CC Water showed that, while the majority of customers felt that Severn Trent Water had done its best in the circumstances, 10 per cent thought that more bowzers should have been provided and the management of the location and filling of bowzers was not as effective as the provision of bottled water.

11.128 **The Review welcomes therefore Severn Trent Water's commitment to explore the grouping and location of bowzers to improve the rate of refill.** The Review also agrees with the company's view that there needs to be a balance between the distribution of locations and efficiency of refilling. While fewer bowser locations would

clearly enhance the logistics of refilling, as well as the supervision and security of supplies, it may also mean that people have to travel further to access supplies, potentially disadvantaging vulnerable people and those without private transport. The Review considers that the industry should have regard to this in its emergency plans.

Provision of water to vulnerable people

11.129 Issues regarding vulnerable people are discussed in more detail in Chapter 12. However, with regard to the emergency following the loss of Mythe water treatment works, the Review notes the findings in CC Water's report that *"vulnerable people appear to have generally been provided for, with organisations such as the British Red Cross, as well as other volunteer groups, helping to distribute bottled water and deliver water from bowzers to people's homes."*

11.130 CC Water's research also showed that there was evidence that people in affected areas had pulled together as a community to look out for neighbours who may have been 'vulnerable'. The research also highlighted that, under these exceptional circumstances, the word 'vulnerable' applied to a wide group of individuals, including babies who could not drink the standard bottled water, those who had no access to transport or were not strong enough to carry water, as well as the elderly, frail or chronically sick. It is vital that all of these groups are understood and catered for.

11.131 However, while water companies do currently maintain registers of vulnerable customers within their supply area that are intended to allow for the prioritisation of water provision in the event of an emergency, Water UK's report highlighted that questions had been raised as to the extent and suitability of these arrangements and recommended that *"water companies should ensure that they maintain a full and up-to-date register of... contact lists for organisations responsible for vulnerable consumers, and of any special communication requirements that they may have..."*

11.132 The Review welcomes this recommendation and urges water companies, in taking this forward, to have regard to guidance published by the Cabinet Office in March 2008 – *'Identifying People Who Are Vulnerable in a Crisis'*, which is intended to help the development of local action plans for identifying groups of people who may be vulnerable in an emergency. Chapter 12 returns to this issue.

Security of bowzers

11.133 The Review received various submissions about the theft of bowzers and damage to them. Within 48 hours of bowzers being deployed, reports of damage were being received by Severn Trent Water's 'Bowser hotline'. An audit of bowzers, conducted by Severn Trent Water on 26 July 2007 to provide a snapshot of the situation, revealed that of 282 bowzers deployed, 38 were missing, 11 had been damaged and 125 were empty. The theft of bowzers is supported by evidence obtained by the DWI, which highlighted that bowzers clearly sourced from the water industry (and therefore believed to be stolen) were being advertised by members of the public for sale on eBay, the auction website, during the incident.

11.134 While the frequency of vandalism to bowzers was relatively minor in the circumstances, the Review notes that instances of bowser damage included damage to security seals (indicating possible contamination of the contents), broken taps, lids being removed and bowzers being left with the tap running. As Severn Trent Water's report highlighted, with over 1,400 bowzers deployed during the incident, it was not possible to provide permanent supervision to guard against theft or vandalism, and at the same time adequately police the distribution process to ensure that customers did not take excessive amounts.

11.135 Such anti-social behaviour is clearly unacceptable. The Review therefore welcomes the proposal by Severn Trent Water that the water industry should examine the potential for using remote monitoring devices to track the location and

water content of individual bowers and tankers. Similarly, the Review also concurs with the DWI's suggestion that:

“Severn Trent Water works with the water industry and other agencies responsible for security and civil order to ensure that in any future similar incident, the risk of anti-social behaviour is promptly accepted and acted upon collectively by all relevant agencies to establish deterrent strategies within the affected communities from the outset.”

Severn Trent Water's provision of information and advice

11.136 Given the scale of the events, Severn Trent Water relied heavily on local radio and television broadcasts to convey information to the public. While information was also published on the company website, the website failed on 22 July 2007 due to the volume of people trying to access it. Although the service was returned later that day, the website continued to suffer from slow response times and limited capacity throughout the duration of the event. Severn Trent Water developed a simplified webpage on 23 July, which included details of bowser locations, maps of areas affected, copies of news releases and advice on coping without piped water. This information was also published on the BBC Radio Gloucestershire website. Despite this, CC Water's research highlighted the general dissatisfaction of the public about the quality and accessibility of information on Severn Trent Water's website. **The Review therefore welcomes the company's commitment to review the capacity and robustness of its website in light of the 2007 floods.**

11.137 In addition to information available via its website, Severn Trent Water established a customer information hotline, along with an additional customer contact centre, to deal with the high volume of telephone calls being received from the public about the incident. These additional services augmented the company's dedicated Customer Operations Service Centre. Severn Trent Water said that these centres received almost 50,000 calls from the Gloucestershire public between 20 July and 8 August 2007.

11.138 CC Water's report also highlighted the communication difficulties experienced by Severn Trent Water during the emergency. Difficulties included information about the location of bowers, which the public generally thought was poor, and the fact that customers often found it difficult to get through by telephone to Severn Trent Water. Even when customers did get through, responses from the company's call centre staff were said to lack confidence and did not provide the necessary reassurance. There was also criticism of Severn Trent Water's low profile in media communications. In its report, Severn Trent Water acknowledged these difficulties.

11.139 Furthermore, a number of submissions to the Review commented on the lack of information displayed on bowers about an individual's water entitlement. It was suggested that it was not widely known that people were expected to manage on 10 litres per person per day and as a result, many people took more than their entitlement in order to meet their total household requirement. This lack of awareness may have been a contributory factor in bowers running dry more quickly than anticipated and added to the logistical problem in re-filling them. It was also suggested to the Review that, if local residents had been aware of the 10-litre per day limit, the majority of people in the community would have respected it. **It is clear that, in any future emergency, bowers need to display clear information about an individual's entitlement. The Review would welcome the water industry considering this further and augmenting its emergency plans accordingly.**

The provision of public health information

Notices on bowers

11.140 The Review notes the DWI's comments in their Incident Assessment Letter to Severn Trent Water that it is standard practice within the water industry for all bowers to bear permanent fixed notices with appropriate clear advice to consumers to boil water drawn from bowers before use. This standard precaution is aimed at informing consumers of the need to safeguard against contamination introduced inadvertently by them when drawing off

water into household containers and during subsequent storage and use in the home or workplace.

11.141 The Review received a number of comments that notices on bowzers in relation to the need to boil water before use were either missing or unclear. In its investigation, the DWI found that the need for notices was not understood by the other agencies involved in Gold Command. For example, the DWI obtained photographs showing how paper copies of Gloucestershire Primary Care Trust's (PCT) health advice leaflet had been attached to bowzers alongside, or obscuring, the permanent water industry notice. The DWI considered that this action was not conducive to maintaining public confidence in the alternative water supply.

Public information and the restoration of mains water

11.142 The mains water supply was not fully restored until 2 August. However, the DWI's investigation determined that the mains water supply could have been restored up to one to two days earlier if it had not been for the insistence of the Gloucestershire PCT that their health and safety leaflet be delivered to affected consumers before the water company operated valves to begin the process of reinstating mains water to affected households. This situation arose due to confusion around roles and responsibilities at the Scientific and Technical Advice Cell (STAC) set up to advise Gold Command in Gloucester. This and other issues around STACs are considered further in Chapter 13.

11.143 The DWI concluded that the action of the PCT acting through Gold Command was *"an interference with the statutory duty of a water company to provide a piped supply of water (along with any appropriate advice to consumers)."* The DWI's Chief Inspector, Professor Jeni Colbourne, commented:

"My inspectors were generally satisfied with the actions taken by Severn Trent Water to reinstate the Mythe Water Treatment Works but the piped water supply could have been reinstated more quickly...the delay of up to 48 hours was due to a decision to issue a health and safety notice prepared by the Gloucestershire PCT prior to the operation of valves to restore the water supply."

11.144 Severn Trent Water undertook a rigorous testing programme of its piped water, approved by the DWI throughout the incident, and issued advice to consumers accordingly. The advice moved from 'Do Not Drink', when mains supply was first restored, to 'Boil Water' precautionary advice on 3 August, and subsequently to 'Safe To Drink' advice on 7 August. The DWI's investigation determined that there was no sound basis for the issuing of a 'Do Not Drink' notice in association with the restoration of the piped water supply and concluded that consumers would have benefited more from receiving the standard 'routine' notice provided by water companies whenever planned work occurs on the mains network. Such notices warn consumers to expect cloudy water (due to air) or discolouration (due to mains deposits) and advise that taps are flushed before use until the water runs clear.

11.145 The Review agrees with the DWI's suggestion that Severn Trent Water works with the rest of the water industry to ensure that all local health professionals have a full understanding of the standard hygiene precautions and practices of the water industry.

11.146 The Review is aware that national discussions between the DWI and the Health Protection Agency have led to an agreement to issue joint guidance on the subject of consumer warning notices in the autumn. The DWI has informed the Review that, following publication of the guidance, there will be a programme of training activities with water companies, health authorities and local authorities to raise awareness of the guidance among responders.

Minimum water provision

11.147 Under the Security and Emergency Measures Direction 1998, water companies are currently required to provide a minimum of 10 litres of drinking-quality water per person per day by alternative means when mains supplies fail.¹⁴ Depending on the size of the water company concerned and the total population it supplies, the guidance sets in place minimum requirements for contingency planning purposes to ensure that in smaller incidents, 8,000 to 50,000 people receive this 10-litre provision for durations of up to three days. For major incidents, the requirement rises to 200,000 people for a week.

11.148 In contrast, the World Health Organization¹⁵ recommends that a minimum of 15 to 20 litres per person per day be made available as soon as possible, and this figure rises greatly once sanitation is factored in; the generally quoted target is 50 litres. Even this figure does not take account of the increased needs of vulnerable people such as the elderly and those with small children.

11.149 The Review has received a number of submissions that the 10-litre limit was insufficient to meet the needs of the public following the loss of Mythe water treatment works. Severn Trent Water, for example, estimated that, while they delivered up to three times more than the minimum requirement at the peak of the emergency, this volume did not meet their customers' expectations, especially given that their normal daily usage amounts to an average of 138 litres. Given this, the Review agrees with Ofwat's suggestion in its report that *"it is not surprising that people found it difficult to adapt to the emergency supply volume."*

11.150 Water UK also concluded in their report that the 10-litre minimum amount was insufficient and stated that *"this amount does not in practice meet consumers' expectations."* The report recommended that:

"...water companies should review with drinking water regulators and public health organisations the likely scale of consumers' requirements for water during emergency events and how this requirement may change throughout an event. We recommend that plans for the provision of emergency drinking water supplies should take as their starting point that each person should be supplied with a minimum of 20 litres per day (i.e. twice the current assumption)."

11.151 On the question of minimum water provision, OFWAT stated that:

"...whilst it might be desirable to increase the minimum quantity supplied, the logistics of increasing this especially during the initial response to an incident make this a difficult task. Severn Trent Water was able to exceed the 10 litres per person per day allocation once the operation was up to full speed, but only because of the unprecedented level of support it received..." and further:

"Any review must consider carefully the definitions of short- and long-term loss of supply and in the initial response to an emergency at least, the focus should be on supplying water fairly and equally to all consumers whilst ensuring the most vulnerable have sufficient supply. This may mean that less than 10 litres is delivered in the first day, but the priority must be for everyone to have some, so that people gain confidence that the supply will be maintained and improved."

11.152 The Review acknowledges that while the majority of submissions to the Review – from both organisations and the public – have suggested that the 10-litre limit was insufficient to meet people's needs during the loss of the Mythe facility, these views are not based on the outcome of any specific research on the issue. However, the Review believes that while

¹⁴ www.ukresilience.gov.uk/~media/assets/www.ukresilience.info/water_guidance%20pdf.ashx

¹⁵ Technical Notes for Emergencies – Minimum water quantity needed for domestic use in emergencies, Technical Note No.9, WHO 07/01/05 – www.who.or.id/eng/contents/aceh/wsh/water-quantity.pdf

10 litres of water may have been acceptable in meeting the immediate and essential needs in the initial stages of the emergency, it was clearly felt by those responding to the Review to be insufficient to meet the needs of the public the longer the emergency went on.

11.153 The Review is aware that Defra, in conjunction with the water industry, is undertaking a review of the 10-litre requirement. In its response to the Review's interim report, the Government stated that:

"Defra has set up a working group to review the requirement for the minimum amount of water. The group will research and review other relevant guidance that indicates quantities of alternative drinking water, together with any sub-allocations. The review will also consider the logistics of distribution of alternative supplies and the adequacy and efficacy of the measures in place for vulnerable people."

11.154 The Review understands that this work, which is being taken forward in conjunction with the DWI, the Health Protection Agency, CC Water, Water UK, water companies and devolved administrations, and will also look at practice in other European countries, expects to publish its findings later this summer.

11.155 The Review welcomes this work and considers that changes to the 10-litre requirement should consider the extent to which the amount of water required may change over the duration of an emergency, having particular regard to the needs of cultural and vulnerable groups (for example the chronically sick, those with young children and faith groups) whose water requirements are likely to be greater than others. In addition, this work should seek the DWI's views on the extent to which the provision of personal water purification devices could play a part in future emergencies in providing a potential alternative to bottled water, or as a supplement to providing water in bowlers (which could subsequently be purified without the need for boiling).

RECOMMENDATION 40: Defra should amend emergency regulations to increase the minimum amount of water to be provided in an emergency, in order to reflect reasonable needs during a longer-term loss of mains supply.

Water requirements of farms and farm animals

11.156 It is not just the needs of people that are important. The water requirements of farms and farm animals also need to be actively considered and in the case of dairy cattle these represent significant volumes, with a requirement of between 70 to 90 litres of water per head per day. The National Farmers' Union (NFU) told the Review that farmers affected by the loss of mains water felt their needs were not adequately provided for, often being left to source their own water supplies for animals removed from pastures and housed in barns to escape the floods. The NFU suggested that this may have been because water companies and emergency responders were unaware of the location of farms or the potential impact of flooding on farm animals, particularly livestock.

11.157 The Review has been informed by Defra that formal guidance to emergency planners in water companies was issued in October 2004 under the Security and Emergency Measures Direction 1998. The purpose of the guidance was to make clear to each water undertaker that, in an emergency, they should also give due regard to the needs of livestock and essential food industries.

11.158 The experience of farmers during the floods of summer 2007, as described by the NFU, was echoed by members of the farming community at some of the Review team's regional visits and meetings. As a result, the Review is concerned about the extent to which the water industry is aware of, and has regard to, the guidance issued by Defra, in planning for emergencies. **The Review would welcome water companies familiarising themselves with this guidance and ensuring that it is reflected in their emergency plans, so that the water requirements of farm animals in an emergency are adequately catered for.**





The local response

This chapter examines issues relating to the emergency response at the local level and the role of the organisations involved. It contains sections on:

- planning, readiness and alerting;
- Gold Commands;
- humanitarian assistance and voluntary sector organisations;
- people stranded on road and rail networks; and
- the role of the Armed Forces.

Planning, readiness and alerting

Introduction

12.1 The scale of the 2007 floods stretched emergency response resources to the limit and beyond, and responders in some areas were not as ready as they might have been. In part, this can be explained by the unprecedented nature of the events, especially when set against a historic pattern of more localised, low-impact flooding. The absence of a warning system for surface water flooding contributed. The frequency and volume of severe weather warnings received by responders (including a number of false alarms) will also have played a part. But it is also clear that, in some areas, there were no agreed protocols between responders, setting out responsibilities for assessing the potential impact of a specific severe weather event and triggering an appropriate multi-agency response. This gap, crucial to the initiation of an effective emergency response, needs to be filled.

Membership of Local Resilience Forums

12.2 Under the Civil Contingencies Act 2004 (CCA), Category 1 and 2 responders come together in Local Resilience Forums (LRFs), usually based on a police force area, to share information, carry out risk assessments and for emergency planning. The concern has been voiced to the Review that because LRF members “also have day jobs”, demands on their time can leave them stretched and sometimes this leads to a lack of continuity of membership at the LRFs. Indeed some LRFs may have only one ‘permanent’ member. This may lead to planning at the LRF being tactical rather than strategic as intended.

12.3 There may also be a reduction in the effectiveness of the LRF in cases where an organisation spans a wide geographical area, leading to the same member sitting on a number of LRFs. In the most extreme scenario, this could mean a small number of people in a national organisation (such as a power company or transport operator) representing their organisation at all 43 LRFs in England

(or 47 if Wales is included). This is a tall order considering that LRFs generally meet every three months, excluding meetings of specialist subgroups. Pressure would be eased if Category 2 organisations employed more staff able to attend LRFs, or if staff could in some instances attend Regional Resilience Forums instead of LRFs. Chapter 18 explores this in more detail.

12.4 It is clear from the events of summer 2007 that a crucial element to the success of the local response is that attendees at Gold and Silver Commands 'know each other in a crisis', having worked together ahead of the emergency. The Review urges all responder organisations to ensure that emphasis is placed on developing and maintaining effective working relationships through the LRF network to ensure that in an emergency, as far as possible, Gold and Silver Commands can operate as an established, cohesive unit.

12.5 Submissions to the Review also point out that LRFs are based on police force areas and may not be coterminous with the operational areas of other responders. This can lead to some areas being left unrepresented.

12.6 A number of submissions to the Review drew attention to inconsistencies in the level of engagement of Category 2 responders, particularly utilities companies, in the work of LRFs. This contributed to a lack of preparedness in some aspects of the response and irregular levels of engagement of Category 2 responders in Gold Commands. Moreover, some Category 2 responders who attended Gold Command meetings were clearly unfamiliar with emergency response procedures and were unable to engage effectively.

12.7 The Review takes these concerns seriously. Category 1 and 2 responder agencies need to ensure that they are suitably represented on all LRFs. For Category 1 responders this is a duty under the CCA. We strongly urge Category 2 responder organisations to ensure they are appropriately represented at both the emergency planning and response stages, including exercises. Chapter 18 returns to these issues.

12.8 LRFs should monitor their membership and where representation is patchy, appropriate actions should be taken as laid down in the CCA. The Review would welcome the current review of the Act considering these concerns closely.

Triggering a multi-agency response

12.9 The Met Office is the primary source for severe weather warnings that may trigger a multi-agency response. Met Office advisers are the natural starting point for improving arrangements for assessing the potential impact of a specific severe weather event. The Review believes that LRFs should designate the police and local authorities as the primary points of contact for Met Office advisers before and during an emergency, in order to ensure effective use of this resource at a critical time.

12.10 In some areas, there was a degree of confusion between responders about whose responsibility it was to consult with partners and to advise whether multi-agency response arrangements should be triggered in light of severe weather and flood warnings. While most LRFs have generic plans in place to respond to emergencies, and some key responders in flood-prone areas have specific flood plans in place, few set out collectively agreed arrangements for assessing the impact of an emergency such as flooding, where the effects can be felt over a wide area and take many forms.

12.11 Upper tier¹ local authorities are well placed to assess the potential impact of floods across their area, liaising with neighbouring local authorities, as appropriate, to gather input on the basis of local visual assessments and previous experience. In light of this, the interim report suggested that upper tier local authorities were best placed to be given 'lead responder' status for planning, with a duty to advise partners on whether multi-agency response arrangements should be triggered, perhaps initially on a precautionary basis.

¹ 'Upper tier' local authority: county councils, London boroughs, metropolitan boroughs and unitary authorities.

12.12 The majority of submissions to the Review on this subject agreed that upper tier local authorities were best placed to **lead the planning** for flooding emergencies. Many responders, including approximately half of all local authorities responding to the Review, also agreed that upper tier local authorities should **lead the triggering** of multi-agency response arrangements in response to severe weather and the likelihood of flooding based on local impact assessments. However, the remaining local authorities which responded to the Review disagreed that upper tier local authorities should also be **solely** responsible for triggering multi-agency response arrangements. A comment from one responder, indicative of many the Review received, said:

“Any one of the agencies can and should trigger emergencies. If this responsibility was placed only on local authorities, people may be looking and waiting to them to trigger multi-agency arrangements whereas at the time it could be affecting another agency more.”

12.13 It was stated further that while local authorities receive severe weather and flood warnings directly, they do not have a large workforce on the ground on a 24/7 basis. As a result, their capability for local visual assessments would be reduced outside office hours, while police forces and fire and rescue services do have a 24/7 presence across an area and either could potentially trigger the multi-agency response.

12.14 Some submissions to the Review also stated that the organisation responsible for triggering the arrangements should be left to local determination on the day, although in practice this would most likely fall to the police, who would do so in close consultation with multi-agency partners, including local authorities.

12.15 However, the Review is concerned that these views propose no more than what is effectively the current default position for triggering the multi-agency response, which was shown during the summer 2007 floods not always to work effectively. Furthermore,

the Review believes that views stating that local authorities are not 24/7 organisations and should not therefore lead multi-agency triggering arrangements may be misjudged, or are at least based on a misunderstanding of the reasoning for the interim conclusion.

12.16 As Category 1 responders under the CCA, upper tier local authorities must be able to respond to emergencies whenever they occur – and this is observed to be the case in practice. The Review appreciates that local authorities will have reduced staffing outside office hours, including fewer staff ‘on the ground’ who are able to give local visual assessments of the impacts of severe weather. However, upper tier local authorities will always have staff available, ‘on call’ in some cases, to liaise with other emergency responders in case of an emergency. Indeed, submissions received by the Review against upper tier local authorities leading the triggering arrangements acknowledge this as they agree that the locally-determined triggering arrangements should be set in train “*in close consultation with multi-agency partners, including local authorities*”.

12.17 The Review also understands that the police and the fire and rescue services are likely to have personnel out working in neighbourhoods observing the impacts of severe weather, including flooding, and ‘calling in’ this information to their control rooms. These local observations and information on severe weather are then assessed in dialogue with other emergency responders, including the upper tier local authority. Current arrangements then allow for any responder agency to trigger multi-agency response arrangements and this is where confusion and inconsistencies were observed to arise during summer 2007, since no one agency had the clearly defined lead responsibility.

12.18 Based on the evidence, the Review reiterates that upper tier local authorities are well placed to assess the potential impact of floods across their area, based on previous experience and the local visual assessments of their own staff and/or those of other emergency responders where necessary. Upper tier local authorities are similarly well placed to take the lead for triggering multi-agency arrangements.

RECOMMENDATION 41: Upper tier local authorities should be the lead responders in relation to multi-agency planning for severe weather emergencies at the local level and for triggering multi-agency arrangements in response to severe weather warnings and local impact assessments.

Communication between multi-agency partners

12.19 Some responders told the Review that there was a degree of uncertainty across responder agencies when they heard that other agencies, such as the police and ambulance service, had declared a 'major incident'. Responders wondered why their own organisation had not also declared a major incident and this led to confusion.

12.20 Each area has a similar definition of a 'major incident', which generally describes an emergency that requires the implementation of special arrangements by one or all of the emergency services, the National Health Service (NHS) or the local authority. In London, for example, guidance from the London Emergency Services Liaison Panel² defines a major incident as:

"...any emergency that requires the implementation of special arrangements by one or more of the emergency services and will generally include the involvement, either directly or indirectly, of large numbers of people. For example:

- *the rescue and transportation of a large number of casualties;*
- *the large-scale combined resources of the police, London Fire Brigade and London Ambulance Service;*
- *the mobilisation and organisation of the emergency services and support services; for example, local authority, to cater for the threat of death, serious injury or homelessness to a large number of people; and*
- *the handling of a large number of enquiries likely to be generated both from the public and the news media usually made to the police."*

12.21 A major incident can be declared by any member of the emergency services who considers that any of the criteria outlined above has been satisfied. In certain circumstances, such as flooding, the local authority may declare a major incident.

12.22 While realising that some types of emergency will apply to one responder more than others, in the case of widespread flooding all responders are likely to be involved to a large degree. The Review believes that communication procedures between responder agencies ahead of formal multi-agency arrangements being in place (Gold Commands) should be clarified so that if a 'major incident' is declared in one, the other agencies are notified as soon as possible and understand the basis for the 'major incident' status. In accordance with the triggering arrangements described above, in flooding emergencies the communication of major incident status between agencies should be carried out in close consultation with the local authority.

12.23 The Review is aware that the Association of Chief Police Officers (ACPO) is in the process of updating its guidance to police forces on emergency procedures, which will also be of interest to other agencies involved in emergency response. This revised guidance is due for issue by the end of 2008.

Leading the multi-agency response

12.24 The vast majority of relevant submissions to the Review agreed with the interim conclusion that, unless otherwise agreed locally, where a Gold Command is established, the police should convene and lead the multi-agency response. ACPO were keen to stress that 'lead' in this respect should

² www.leslp.gov.uk/docs/Major_incident_procedure_manual_7th_ed.pdf

not imply primacy; however, they were content with the interim conclusion, which we now restate as a recommendation.

RECOMMENDATION 42: Where a Gold Command is established for severe weather events, the police, unless agreed otherwise locally, should convene and lead the multi-agency response.

Gold Commands

Introduction

12.25 Gold Commands activated in the summer were effective in coordinating the local response, often with reassuring and high-level visible leadership.

Early activation of Gold Command

12.26 In some areas, responder organisations had difficulty in engaging effectively with the local response effort, possibly because Silver Commands were activated instead of Gold. This also hindered the involvement of the media, which meant that essential public information messages did not necessarily get through, with less helpful news items being broadcast instead. Although these areas coped, the strategic perspective brought by Gold Command would have allowed more effective engagement by the full range of potential responders and hence the easier procurement of external resources, including involvement of the Armed Forces where this was appropriate.

12.27 Evidence submitted to the Review shows that there is a clear benefit in Gold Commands being activated at an early stage on a precautionary basis when assessments indicate that significant disruption from flooding is likely. This assessment should be based on the likely impact locally, as well as rainfall and weather data from the Met Office and flood data from the Environment Agency. Precautionary Gold Commands need not physically convene at the outset: conference telephone calls or other appropriate means of multi-agency communication, could be used to share and assess information on the extent of the emergency.

12.28 Since early precautionary Golds were first proposed in the interim report, the UK has experienced the East Coast surge event of November 2007 and instances of ‘usual’ winter flooding in south-west England. In these cases, early, precautionary Gold Commands were established and were found to work well. While responders warned against being overly cautious and calling Gold Commands “every time it rained”, they agreed that, with experience, the optimum point to convene Gold would become established locally over time.

RECOMMENDATION 43: Gold Commands should be established at an early stage on a precautionary basis where there is a risk of serious flooding.

Emergency response facilities

12.29 The Review has received positive feedback from responder organisations on the emergency facilities at Gloucestershire Constabulary’s purpose-built headquarters in Gloucester, which can accommodate a Gold Command at short notice in the event of a major incident. The Gold Command suite’s IT and communications systems, including immediate Gold e-mail addresses for all responders, were said to work well. The Gold suite was also complemented by an adjacent flexible open-plan space to accommodate agencies and Gold support services.

12.30 The Review believes that the response to major incidents would be more effective if a similar level of facilities were the norm. Incorporating IT to support flood visualisation tools, as they become available to multi-agency responders, would enhance facilities yet further and these tools are discussed in Chapter 10.

12.31 In reviewing facilities, responders should ensure that control rooms support multi-agency use, and should bear in mind the way different responders work and the different equipment required. In addition, all organisations that will be part of the multi-agency response to emergencies should ensure that their representatives are familiar with the emergency response facilities ahead of an emergency. A similar approach in Silver Command facilities would also pay dividends.

RECOMMENDATION 44: Category 1 and 2 responders should assess the effectiveness of their emergency response facilities, including flexible accommodation, IT and communications systems, and undertake any necessary improvement works.

Humanitarian assistance and voluntary sector organisations

Introduction

12.32 The Review pays tribute to the many humanitarian organisations whose contributions were, and indeed still are, invaluable following the floods. The emergency response to the floods of summer 2007 would not have been as successful without the committed contribution of the voluntary sector in a variety of roles. Similarly, continuing recovery operations continue to rely heavily on their contribution. This section of the report gives illustrative examples of the tasks undertaken by the voluntary sector, cites problems encountered and suggests possible future activities. More detail on the specific roles played by voluntary sector organisations during the response to and recovery (including fundraising) from the floods of summer 2007, is provided in Chapters 11 and 28.

Activities of voluntary organisations during and after the floods

12.33 The Review is aware that a wide range of voluntary organisations was involved in the response and recovery activities following the floods, including the British Red Cross, the WRVS, Salvation Army, Women's Institute, Help the Aged, Rotary International in Great Britain and Ireland, Fair Shares and Timebank. Indeed, the number of voluntary organisations involved in the response to and recovery from the floods of summer 2007 was so great that they are too numerous to mention individually here. However, the Review pays tribute to all these organisations and their dedicated

personnel, whose contributions, whether large or small scale, were important to the effectiveness of the overall response and recovery effort.

12.34 The assistance provided by voluntary organisations was hugely varied. The list below outlines some examples of the activities the voluntary sector carried out and serves to highlight to the wider emergency response community how they might utilise the skills available through this sector. Activities included:

- procuring and distributing water, food, beds and hygiene packs;³
- coordinating and assessing needs via telephone support lines;
- transferring non-urgent casualties in four-wheel drive vehicles;
- assisting evacuation;
- identifying vulnerable people and referring them to social services;
- staffing rest centres, including providing practical and emotional support;
- warehousing, transportation and distribution of donated goods;
- fundraising;
- recovery support, including providing cleaning materials for homes; and
- assessing and tasking spontaneous volunteers.

Engagement of voluntary organisations in emergency response

12.35 Engagement of the humanitarian organisations with Category 1 and 2 responders was generally good during the floods of summer 2007. There were, however, examples where emergency responders lacked understanding of the roles that voluntary sector organisations could play in the response, the supporting legislation and how to engage with the sector. This meant that the response to the emergency was not as effective as it might have been.

³ In response to the loss of mains water supplies in Gloucestershire, 8,378 beneficiaries were assisted, 335,577 litres of bottled water were delivered and 2,260 food parcels, 1,769 hygiene kits and 8,466 dry toilet packs were distributed by the British Red Cross alone.

12.36 There was also frustration that, despite clear unmet needs, it sometimes proved necessary for the voluntary sector to approach some local authorities to ask them to utilise their resources. For example, one organisation explained to the Review how, four days into the floods, they had to offer their services as no formal request had been received. This may have been partly because responders were busy coordinating their own efforts but there are also instances where it appears that local authorities might have chosen not to use voluntary organisations. On some occasions when specific help, including equipment, was offered, it was refused without an explanation.

12.37 Some of these difficulties could be a result of local relationships not having been established before the floods. However, it has also been suggested to the Review that local authorities may have feared negative perceptions in the minds of the public about their ability to cope if voluntary sector assistance was called in. Non-involvement or delayed involvement of the voluntary sector in the response phase also increased the challenge for organisations in becoming involved in the recovery phase. This meant that in some cases vulnerable people did not receive access to the humanitarian assistance they needed as early as they could have if the full and active engagement of the voluntary sector had been established from the outset.

Voluntary sector organisations and civil contingencies legislation

12.38 It is felt by some that the patchy integration of the voluntary sector into wider emergency plans may, in part, be due to lack of clarity in the CCA and associated guidance underpinning arrangements for the coordination of emergency planning and response. To paraphrase, the CCA states that Category 1 responders, in carrying out their duties, should 'have regard to' voluntary organisations. The guidance then discusses the intent of this section.

12.39 The Review was told by one voluntary sector organisation that it would like to see, within the guidance to the CCA, a clearer explanation of what is intended by the expression 'have regard to' and how the

approach of individual Category 1 responders may be assessed. In essence, this view suggests that a lack of clarity in the guidance results in Category 1 responders not utilising the voluntary sector as much as they might.

While the Review does not come to a conclusion on this point, it would welcome the Cabinet Office considering further the involvement of the voluntary sector in emergency planning in the current review of the CCA.

Coordinating the response from voluntary sector organisations

12.40 The contribution of individual voluntary organisations can be substantial, especially where they provide a specialist capability. However, the voluntary sector should not be considered as an array of unlinked organisations acting independently.

12.41 The voluntary sector can be expected to deliver a coordinated response both locally and nationally via the Voluntary Sector Civil Protection Forum, chaired by the British Red Cross and supported by the Cabinet Office. This is a single platform for voluntary sector communication with government and professional institutions. In a major or widespread emergency, it would be possible to use the chair of the Forum to engage with other voluntary sector emergency response organisations. Any gaps in provision could then be filled by the membership if they have the capacity and capability, or via 'advocacy' – identifying the relevant agency and passing on the information.

12.42 Where gaps are identified and individual needs are not being met, which other organisations could address, advocacy can play an important role. This was demonstrated after the floods when voluntary sector personnel working in schools in Doncaster identified that the schoolchildren were frightened of crossing local roads because of heavy traffic involved in the recovery work. This information was passed on to the local authorities, who then provided a 'lollipop lady'. Another example could involve passing on to the authorities the location of vulnerable people who have not been identified by other means. The voluntary sector has stressed to us that in passing on such information, there is no

intention to be critical and it is left to the experts to work out how to deal with the situation. The Review endorses advocacy as a means to ensure that people's needs are met and urges responders to accept this constructive interaction in the spirit intended.

Memoranda of understanding

12.43 During the floods, volunteers coordinated by a recognised voluntary organisation contributed highly effectively to the response and recovery effort. This is the voluntary sector's forte and the Review positively encourages them to continue their recruitment campaigns. As well as this well-recognised role, the voluntary sector is involved in a range of innovative support activities which are often less familiar to the emergency response community. The Review believes that such activities would be more widely implemented if they were recognised and understood more extensively at the planning stage.

12.44 One such input to emergency planning is the drawing up of agreements ('Memoranda of Understanding', or 'MoUs') with organisations to provide humanitarian assistance in times of need. Examples the Review is aware of are MoUs between the British Red Cross and a local authority to supply substantial numbers of beds in an emergency; between the British Red Cross and an electricity company to provide households with assistance in the event of power cuts; and between the British Red Cross, the WRVS, the Royal Society for the Prevention of Cruelty to Animals (RSPCA) and the Highways Agency to provide emergency welfare in the event of large numbers of people, including domestic pets and livestock, being stranded in vehicles on motorways and major trunk roads. The voluntary sector is keen to extend these arrangements and we see great value in this approach.

12.45 The Review has also heard enthusiastic support from a number of voluntary sector organisations towards becoming involved in the task of door-to-door knocking to warn households of flooding, which is discussed in more detail in Chapter 21. The Review acknowledges that this task may be well suited for voluntary organisations to carry out and

one which they could (and should) become involved in. The voluntary sector's knowledge of vulnerable people would also be particularly useful in this regard.

12.46 The voluntary sector wants to be more widely utilised. Indeed, one voluntary organisation in its submission went so far as to ask the Review to task it specifically in our recommendations. The clear message is that voluntary sector organisations should be viewed as key professional partners to be integrated in all stages of emergencies including planning, response, recovery and, importantly, lessons-learned reviews after emergencies and exercises. **Much of this engagement at the planning stage will be via voluntary sector representation in LRFs and their voluntary sector subgroups and the Review would welcome LRFs and the voluntary sector ensuring they have mutual, effective, cohesive links in place.**

The use of volunteers

12.47 It is clear that the public are keen to volunteer: in Gloucestershire during the 2007 floods, offers of help compiled by the Police Casualty Bureau ran to a list 38 pages long. More widely, organisations such as the Red Cross, St John Ambulance, the WRVS and the Salvation Army have thousands of volunteer members. People also volunteer to become Special Constables, Neighbourhood Watch members and Flood Wardens. The role of volunteers in the flood rescue effort is discussed in Chapter 11.

Spontaneous volunteers

12.48 A number of submissions to the Review have discussed how spontaneous, or walk-in, volunteers had difficulty engaging in the response and recovery effort. The high volume of offers to help left the authorities struggling to cope. Their difficulties included collating the different types of help offered (from personal befriending and staffing rest centres through to offers by the owners of four-wheel drive vehicles to help move people from flooded areas and transport water), and, importantly, the need to carry out checks before a volunteer could work with vulnerable people.

12.49 Because responders were unable to establish volunteers' fitness for the role in some cases, offers of help were not taken up or people were turned away for safety and liability reasons. However, where they could engage, unaccredited volunteers played an important role, for example in comforting members of the community. The Review heard how, in one area, responders asked all unaccredited members of the local community to leave the affected area and this meant that victims who had been comforted by local residents were left alone. With this in mind, one voluntary organisation, in its submission to the Review, saw the need for a less stringent set of rules, or at least the relaxing of some rules, during emergencies and urged the response community to accept that members of the local community may not be accredited but can still be of beneficial use.

12.50 Responders should have plans in place for occasions where spontaneous volunteers do offer their help in an emergency; the Review is aware of work on this matter outside the UK, including the guide '*Spontaneous Volunteer Management Planning*'⁴ from the Government of New Zealand and a Red Cross project in Austria, 'Team Österreich',⁵ which relies on prior expressions of interest from potential volunteers. **The Review is also aware of a project being led by Skills for Justice to develop National Occupational Standards in planning for and responding to emergencies, including how to manage and develop volunteers;⁶ we believe that experiences from the 2007 floods might be usefully incorporated and would welcome Skills for Justice drawing on the present report.**

Spontaneous volunteers, Austria

Team Österreich is a joint project between the Austrian Red Cross and Hitradio Ö3, Austria's largest radio station. The project was launched through a well-publicised campaign in the summer of 2007. The public were asked to indicate their interest in helping in the response to a future emergency or disaster by contacting the Austrian Red Cross and agreeing to have their details entered onto a database of spontaneous volunteers.

Each volunteer receives a two-hour familiarisation session to raise their awareness of the response activities and structures and to establish the nature of their potential contribution. By December 2007, more than 23,000 volunteers had registered, providing contact information and potential areas of activity, for example sorting and packing relief goods, filling sand bags and administration. In an emergency, available volunteers are brought in and briefed and are then regarded as Red Cross volunteers, covered by insurance for the duration of their deployment.

Insurance for volunteers

12.51 Where spontaneous volunteers were used, it was generally at the request of a recognised organisation, such as the police or the British Red Cross, who were able to assess the volunteer's skills and training. Volunteers working in an emergency under the direction of responders and recognised voluntary organisations, such as the British Red Cross and the WRVS, are usually covered by the organisation's insurance for liabilities, in the case of damage to property or injury to themselves or other people. This follows assessment of the volunteer's fitness and abilities, and may include training. To utilise fully all those wishing to contribute to the response effort, it was suggested to the Review that spontaneous volunteers working

⁴ [www.civildefence.govt.nz/memwebsite.nsf/Files/SpontaneousVolBPG306/\\$file/SpontaneousVolBPG306.pdf](http://www.civildefence.govt.nz/memwebsite.nsf/Files/SpontaneousVolBPG306/$file/SpontaneousVolBPG306.pdf)

⁵ <http://translate.google.co.uk/translate?u=http%3A%2F%2Foe3.orf.at%2Fteamoesterreich&sl=de&tl=en&hl=en&ie=UTF-8>

⁶ www.skillsforjustice.com/template01.asp?pageid=458

independently and not under the direction of an organisation should have access to insurance for liabilities.

12.52 The Review pursued this with insurers and their industry body, the Association of British Insurers. However, we were advised that liabilities insurance for independent volunteers is not possible due to the lack of prior assessment of the volunteer's suitability to carry out the task and also the large range of tasks that they might undertake, which would be impossible to define. In the case of injury, death or damage to property, insurance claims could be very large and it would not be commercially viable for companies to bear this risk.

12.53 The Review still encourages individuals to offer their assistance during emergencies, and to contribute to less risky activities such as checking on neighbours and lending equipment, however, it is more helpful if an individual can join a voluntary organisation, where skills can be assessed in advance and training provided. In this way, voluntary organisations can become invaluable repositories of skills available to the community, including first aid qualifications and language skills.

The provision of support to vulnerable people

12.54 During the summer 2007 floods, local authorities and voluntary sector organisations were very active in providing social care support for vulnerable people. However, evidence to the Review shows that there were sometimes difficulties identifying who was vulnerable and there was occasionally reluctance to share personal information due to misconceptions over data protection rules.

Identifying vulnerable people

12.55 The definition of who is vulnerable can be particularly wide in flooding events. In addition to elderly, sick and disabled people, families with small dependent children, who may have the added problem of collecting

their children from school or nursery, as well as foreign language speakers who might not understand or be aware of flood warnings, and people who have recently moved to an area, may also be potentially vulnerable. A person's vulnerability can also change with time as flooding progresses, with warnings perhaps needing to change accordingly, and this is discussed in Chapter 21.

12.56 Research conducted by CC Water following the extended loss of mains water supplies in and around Gloucestershire in July 2007 highlighted that, in the prevailing circumstances, vulnerability extended to babies who could not drink the standard bottled water as well as people who either had no access to transport or were not strong enough to carry water back to their homes. Even then, an individual's particular needs may necessitate further consideration, for example, an elderly woman had bottled water delivered to her door by emergency responders, only for responders to find some time later that she had not been able to open the bottles due to arthritis.

12.57 Prompted by the particular problems faced by vulnerable people during the summer 2007 floods, and the problems which some local responders had in delivering a consistent and effective approach, the Review recommended in its interim report that:

"...the guidance currently under preparation by the Cabinet Office to provide local responders with advice on the definition and identification of vulnerable people and on planning to support them in an emergency should be issued urgently."

12.58 The Cabinet Office subsequently published guidance in March 2008, *'Identifying People Who Are Vulnerable in a Crisis'*,⁷ which centres around four stages of establishing an emergency plan for identifying people who are vulnerable in a crisis, namely:

⁷ Identifying People Who Are Vulnerable in a Crisis – Guidance for Emergency Planners and Responders. www.ukr.gov.uk/news/vulnerable.aspx

- *building networks* – identifying and working with those organisations best placed to have current information of the location and particular needs of individuals, for example residential care homes and the hotel industry;
- *creating ‘lists of lists’* – instead of creating a list of vulnerable people, which would be difficult to maintain and keep up to date, the guidance suggests that emergency responders prepare lists and contact details of those organisations who can provide relevant information quickly in the event of an emergency;
- *agreeing data sharing protocols and activation triggers* – which should be flexible to adjust to changing circumstances; and
- *determining the scale and requirements* – estimating the number of vulnerable people and their range of needs in advance of an emergency and building this information into emergency plans.

12.59 The Review welcomes this guidance and is aware that LRFs are now using it to further develop their humanitarian assistance arrangements. This guidance fits well with a wider effort which local responders are making to improve the way they meet the needs of vulnerable people during emergencies. This work, informed by the guidance, and other tools, such as the Environment Agency’s Flood Vulnerability Map, which is covered in more detail in Chapters 10 and 21, should prove helpful during future emergencies.

Sharing data about vulnerable people

12.60 The Review considers that issues relating to one aspect of the guidance, the sharing of data, is worthy of particular reference. The interim report highlighted that during the response to the floods of summer 2007, some responders were reluctant to share personal information with each other for fear of contravening duties of confidence or the Data Protection or Human Rights Acts, resulting potentially in disciplinary action being taken against them.

12.61 Existing Cabinet Office guidance, ‘Data Protection and Sharing’⁸ has sought to address some of the myths surrounding data protection as an aid to emergency planning, response and recovery. This guidance is intended to provide a framework within which personal information can be used with the confidence that individuals’ rights to privacy are respected. One of the key principles in it is that **data protection legislation is not a barrier to appropriate information sharing**. The Review considers that this is a key point worthy of re-emphasising.

12.62 The recent Cabinet Office guidance, ‘Identifying People Who Are Vulnerable in a Crisis’, sought to clarify further these principles in relation to vulnerable people and provided some key points for emergency planners to consider in developing agreed data sharing protocols and triggers. These included that:

- while the Data Protection Act 1998, the key law governing the use of personal data, does not empower the sharing of data, it does not prevent legitimate sharing either: instead, it puts in place a framework within which any sharing should take place;
- local authorities are likely to have legal powers to share information on vulnerable people in the circumstances and context described within the guidance;
- for the purposes of risk assessment and emergency planning, clear legal power to share information is found in secondary legislation made under the Civil Contingencies Act 2004;
- local and regional responders need to balance the potential damage to the individual (and where appropriate to the public interest) in keeping the information confidential against the public interest in sharing the information as part of the response to an emergency (including the humanitarian response). A key question to ask is, ‘what would I want done if I were the data subject?’;

⁸ Data Protection and Sharing – Guidance for Emergency Planners and Responders. www.ukresilience.info/dataprotection.pdf

- under the Data Protection Act, consent of the data subject is not always a necessary precondition for lawful data sharing; and
- if personal data is collected by one organisation for a particular purpose, it does not mean that it can *only* be used by another organisation if the purpose is the same. The legal requirement is to ensure that the new purpose is *not incompatible* with the original purpose.

12.63 The Review urges emergency responder organisations to ensure that personnel are familiar with this guidance and that appropriate relationships are established between the range of organisations that hold relevant data on vulnerable people, such as social care departments, faith groups and voluntary organisations. In particular, in the planning stage, organisations are encouraged to implement the two important steps outlined in '*Identifying People Who Are Vulnerable in a Crisis*'. These are to:

- *share less detailed information* – such as an indication of the type and indicative numbers of vulnerabilities that may exist in certain geographic areas, instead of detailed data on individuals. For instance, it may be enough for planning purposes to know the numbers of people within a certain geographic area that require prescription medicine. This can allow preliminary allocation of GP resource (or equivalent). The detail of who those people are (and possibly the type of prescription medicine required) may only need to be shared when an incident is imminent; and
- *agree the method and format* in which information will be shared in the event of an incident occurring.

12.64 Furthermore, the Review encourages the Cabinet Office to continue actively promoting the guidance at a local and regional level.

Rest Centres

12.65 Rest centres are premises used for the temporary evacuation of people from the scene of an incident. These centres are intended to provide a place of safety where evacuees can be cared for immediately after an event has occurred, either until it is safe to return home, or until suitable longer term accommodation

can be found. As a Category 1 responder under the Civil Contingencies Act 2004, local authorities are responsible for the coordination of rest centre accommodation, as well as arrangements to get people to rest centres.

12.66 During the flood events of summer 2007, many people were forced to evacuate their homes, often at short notice, when their properties were affected by rising flood water, while others away from their homes when the floods struck found it impossible to get home due to flood waters. The majority of people affected were able to make their own arrangements to stay with family and friends, which is clearly preferable if it is an available option, as pre-existing support networks will generally offer more social, emotional and practical support than can be provided in a rest centre. However, for those people who did not have support from family or friends readily available – as was the case for a number of people stranded mid-journey on the road network – local authorities had to implement emergency plans to establish rest centres. These were set up, for example, in church halls, universities, schools and leisure complexes. In some cases, rooms in hotels and guest houses were used for small numbers of people with no specific welfare needs, where it was considered more cost-effective than opening up rest centre accommodation.

12.67 The Review considers that rest centre arrangements generally worked well during the floods, largely due to the combined efforts of a range of organisations, including local authorities, the emergency services and the voluntary sector, who worked tirelessly to provide a wide range of humanitarian assistance to people made temporarily homeless by the events. The assistance provided included shelter, warmth, food and water and emotional support in the form of reassurance or simply a friendly face to talk to. For example, in Hull, the Salvation Army provided practical and pastoral care to pensioners staying at the University of Hull following evacuation from their homes and also provided assistance to those sheltering at the City Hall by providing blankets. In Evesham, they assisted the local authority in providing support to those evacuated to the rest centre set up at the local leisure centre.

12.68 Inevitably in a large-scale emergency like the one experienced in summer 2007, a number of issues came to light to illustrate where local rest centre emergency plans could be improved. One of these related to the location of designated rest centres, some of which could not be used because they became inundated with flood water, as were other important sites including police headquarters, county council offices holding data on vulnerable people, and depots holding stocks of sand for sandbags. As a result, the Review recommended in its interim report that:

“...all LRFs should undertake an urgent review of the resilience of designated rest centres and other major facilities to ensure either that they can be used in the response to flooding and other major emergencies, or that alternative arrangements are put in place.”

12.69 The Review notes that such a review has subsequently been carried out by LRFs and contingency arrangements are being made where there are rest centres which are at risk of flooding. The number of rest centres available has also been considered by LRFs. For example, in some cases, smaller, more localised rest centres have been identified to be used if the emergency causes problems with travelling (one of the lessons learned from the summer floods). Other major facilities have also been checked and, where there are vulnerabilities, these have been highlighted to the appropriate organisations for them to set up business continuity plans. A number of LRFs have also carried out analysis against consequential risks such as loss of power.

Other centres for assistance

12.70 Beyond rest centres, there are other types of centre which may be set up by local responders, generally the police and local

authorities, to provide assistance in response to emergencies and incidents. These include: family and friends reception centres; survivor reception centres; humanitarian assistance centres (HACs); and casualty bureaux. HACs are normally established by the local authority, following a decision by Gold Command, within two to three days of an emergency or major incident, to provide a one-stop-shop for all those affected by an emergency (including survivors, family and friends), through which they can access support, care, information and advice from a range of agencies.

12.71 The Review heard from some responders that the range of centres that may be established in response to an emergency or incident has the potential to cause confusion among emergency responders and the public, especially if inconsistent terminology is used to describe the nature of assistance provided by the centre in question.

12.72 While the Review is not aware of evidence to indicate that this caused a major issue in response to the floods of summer 2007, the Review encourages local authorities and the police, working through LRFs, to ensure that the purpose of each of these centres (including rest centres) is clearly defined in emergency plans, along with the arrangements and triggers for how each one links into the wider incident response framework. In doing so, organisations should have regard to the Government's *Evacuation and Shelter Guidance*⁹ as well as guidance from the Department for Culture, Media and Sport on establishing humanitarian assistance centres in emergencies,¹⁰ which is currently being updated for issue in late 2008 or early 2009.

12.73 In addition, the Review encourages organisations to draw on the experience of the Emergency Planning Beacon Authorities,¹¹ who have a great deal of experience and

⁹ HM Government – Evacuation and Shelter Guidance – non-statutory guidance to complement *Emergency Preparedness and Emergency Response and Recovery* (2006). www.ukresilience.info/evac_shelter_guidance%20pdf.ashx

¹⁰ Humanitarian assistance in emergencies – non statutory guidance on establishing humanitarian assistance centres – Department for Culture, Media and Sport (May 2007). www.ukresilience.info/hac_guidance%20pdf.ashx

¹¹ The Beacon Scheme identifies excellence and innovation in local government. In 2006-07 emergency planning featured as a beacon theme and seven local authorities and emergency planning units were awarded beacon status for emergency planning. www.ukresilience.info/preparedness/ccact/goodpractice/beaconscheme.aspx

best practice to share with other responder organisations, not just about rest centre and humanitarian assistance centre planning but concerning emergency response planning across the board.

People stranded on road and rail networks

Introduction

12.74 There were many instances of motorists and rail passengers being stranded in transit due to disruption to road and rail networks as a result of the flooding events of June and July 2007. Evidence to the Review shows that there is some good practice in place to provide welfare for stranded people. However, this is sometimes patchy and it is not clear that people's needs would be adequately catered for across the board in a future wide-area emergency.

The road network – the provision of emergency welfare

12.75 By far the most serious incident on the roads occurred on Friday 20 July, when an estimated 10,000 motorists in south-west England were stranded overnight between junctions 10 and 12 of the M5 and surrounding roads. While emergency responders were able to cope, accommodating a number of people in rest centres overnight, the immediate impacts were lessened considerably by the fact that the incident occurred in the summer.

12.76 Had the M5 event occurred during the winter, the consequences could have been much more serious, as was the case in January 2003, when snow and ice caused widespread and severe disruption on the motorway and trunk road network across south-east and eastern England and parts of Scotland. In the most severe cases, people were trapped on the M11, near junction 7, and the A90 near Aberdeen, for up to 24 hours.

12.77 Following the January 2003 incident,

which became known as 'White Friday', the Highways Agency commissioned an internal review of the provision of welfare assistance to stranded motorists in the event of any future emergencies of this nature. This subsequently led to a framework agreement, developed in consultation with the Department for Transport (DfT), Cabinet Office and Category 1 responders, setting out the roles and responsibilities of responder organisations in the event that emergency welfare provision was needed. Under the framework agreement, in essence, the Highways Agency, through partnerships with voluntary sector organisations, would be responsible for providing basic and essential welfare to motorists on the strategic road network¹² (motorways and trunk roads), evacuating and transporting people to rest centres in extreme circumstances as necessary, while local authorities would be responsible for setting up appropriate rest centres and then providing emergency welfare support to people evacuated from vehicles.

12.78 At the time of the M5 incident last July, the Highways Agency was still in the process of agreeing MoUs with voluntary sector organisations to provide the welfare support to motorists on its behalf, and the guidance setting out how the arrangements would work in practice had not been finalised. Despite this, the Highways Agency was able to call on the British Red Cross to respond to the M5 incident, due to interim arrangements which had been established pending the formalising of the guidance and MoUs.

12.79 The Highways Agency subsequently published guidance¹³ in October 2007, which set out arrangements for triggering emergency welfare support and the nature of support to be provided in response to future incidents on the strategic road network. The Highways Agency also signed a MoU with two voluntary sector organisations – the British Red Cross and the

¹² The Highways Agency is responsible for managing, maintaining and improving the strategic road network in England on behalf of the Secretary of State for Transport. The network represents two per cent of England's roads (more than 5,000 miles) and comprises motorways, dual carriageways and single carriageways in both urban and rural areas. It carries approximately one-third of all road traffic in England and nearly two-thirds of all heavy freight traffic. Other roads in England are managed by local authorities.

¹³ Highways Agency – Provision of Emergency Customer Welfare on Motorways and All Purpose Trunk Roads – National Policy Guidance – 2007. www.highways.gov.uk/business/17026.aspx

WRVS – to provide this emergency welfare support on the Agency's behalf. A separate MoU was also established between the Highways Agency and the RSPCA to provide emergency welfare assistance to domestic pets and livestock.

12.80 The Highways Agency informed the Review that, while it has no legal duty to provide welfare support to stranded motorists, it recognises that severe weather can have a dramatic impact on the reliability of the road network (the flooding events of July 2007 created a substantial 'spike' in delays on the strategic road network, with flooding on the 20 July alone responsible for an estimated 2 per cent of the delays for the whole year). With this in mind, the Highways Agency's intention is to provide, where circumstances allow, a consistent standard of basic emergency welfare to motorists stranded on the strategic road network and this provision forms an integral part of its response capability, in line with one of its key performance indicators¹⁴ to "*deliver a high level of road-user satisfaction.*"

12.81 The Agency's emergency welfare arrangements are intended to be activated only under exceptional and extreme circumstances, with evacuation from the scene of the disruption generally considered only as a last resort. In the event of support arrangements being triggered, every effort would be made to provide support in or close to motorists' vehicles to address their very basic welfare needs – for example water, emergency food rations, survival blankets and hygiene needs, including in-car or roadside toilet facilities.¹⁵ The first priority of responders would be to identify those persons and/or animals deemed most vulnerable, for example sick or injured people, babies and young children, elderly people, and people with disabilities, and to establish the extent of their needs. Consideration would also be given to the diversity of people's needs, such as their faith, cultural background and beliefs, ensuring that communication and any

emergency welfare items provided have regard to these needs.

12.82 The Highways Agency also encourages motorists, as far as circumstances allow, to take responsibility for their own welfare and that of their passengers. In conjunction with the DfT, the Agency promotes a 'Travel Prepared' message, which urges motorists to always carry their own personal welfare items when travelling on the roads. In addition, the Agency's website¹⁶ and its summer and winter service leaflets provide checklists and advice on items that motorists may wish to consider taking with them when they travel (such as a basic emergency kit in their vehicle: water; food; warm clothes and a blanket; first-aid kit; mobile phone and in-car charger; torch; battery jump leads) to help ensure that they are adequately prepared for an emergency.

12.83 The Review commends the Highways Agency for their initiative in developing these measures to provide emergency welfare support to motorists stranded on the road network. It is clear that, while these arrangements are still relatively new and need time to bed in, they provide welcome support to motorists, passengers and animals stranded for extended periods in long queues of stationary traffic. The Highways Agency informed the Review that it intends to undertake an *Emergency Customer Welfare Aware and Prepare* campaign, which will run for six months from June 2008, to help raise awareness further. This campaign will also advise drivers how to be prepared in the event of their being stranded on the road network.

The provision of information on the road network

12.84 The Highways Agency told the Review that, from lessons learned following previous incidents, by far the most common request from motorists stranded on the road network is for information. As a result, the primary focus

¹⁴ Helping you with your journey – Highways Agency Business Plan 2008-09.
www.highways.gov.uk/aboutus/documents/HA_Business_Plan_07-08_WFV.pdf

¹⁵ The Highways Agency informed the Review that the provision of hygiene needs present particular challenges. While the Agency are looking at ways of addressing this, for example using in-car hygiene packs, this provision is said to be still some way off.

¹⁶ www.highways.gov.uk/

of the Agency's support to people stranded is aimed at keeping motorists informed, for example on the anticipated length of the delay and the reason for it.

12.85 A number of submissions to the Review support the view that the provision of regular, accurate and timely information is vital. For example, a member of the public stranded on the M5 in July 2007 told the Review that:

"Safety information needs to be put out much earlier, on a national level. Had I known on the M1 further north the real extent of any problems in the [South West] ... I could have stopped the journey and found a hotel in the daylight and continued on the Saturday ... It transpired that many people had set off without being aware of the very real problems ahead and that is simply unforgivable. Many also had small children with them and narrowly averted a real crisis. Floods are one thing... but surely we really could do better to prevent people getting stranded, like many people did (M5 etc)..."

12.86 In addition, in its submission to the Review, the Automobile Association said:

"... when motorways or trunk roads are closed or disrupted, particularly for long periods, the travelling public demand accurate and timely information. The Highways Agency has significantly improved the extent and reliability of information to drivers who are en-route, through use of variable message signing. We welcome this enhancement. However, there are two aspects that need further consideration, the distance beyond which such messages are considered unnecessary and also the situation for those much closer to motorway closures. The AA still receives complaints from motorists who are trapped in congestion caused by long-term closures who are concerned for their welfare. Some say that not enough is being done to quickly gauge the severity of an incident and prevent further drivers from ending up in the same situation. More needs to be done to ensure motorway access points can be quickly closed and diversions put in place. The AA

notes that official diversion signing between motorway junctions exists on only a fraction of the English motorway network."

12.87 The Highways Agency has contingency plans in place which enable it to respond in the event of serious unavoidable blockages on motorways and trunk roads, for example through the use of demountable central barriers to enable traffic to be cleared by utilising adjacent carriageways. However, as the Review's interim report highlighted, it is clearly preferable wherever possible to prevent people from becoming stranded on the road network in the first place.

12.88 Through its National Traffic Control Centre in the West Midlands and seven regional control centres, the Highways Agency monitors the road network on a continuous basis for early warning signs of impending disruption, using a range of measures such as an extensive network of CCTV cameras and patrols by about 1,500 traffic officers. Any available information that can be provided to give an early warning of potential incidents is considered and may include: alerts when bad weather is expected; local incident black spots and pinch points on the network; planned and emergency maintenance and repair works; and high demand periods when incidents are more likely to occur. This 'horizon scanning' will be augmented in July 2008 by the introduction of an Advanced Command Cell, which aims to provide a focus for any developing information and impact assessment of potential disruption to the network, supporting the implementation of the Agency's contingency plans for the most serious events, not just flooding.

12.89 Other measures introduced by the Highways Agency to tackle congestion on the strategic road network include:

- establishing agreed 'off-network diversion routes' (pre-identified and in some cases pre-signed routes that by-pass sections of the strategic road network) with local authorities;
- the use of strategic variable message signs to direct longer-distance traffic via an alternative route on the strategic road network at decision points;

- the extension of existing Met Office support arrangements to include access to Met Office weather forecasters on a 24/7 basis, along with information focused on expected weather conditions on the strategic road network which will incorporate an assessment of the likely impact of severe weather;
- improvements to the capacity and the resilience of the Agency's telephony system and TrafficEngland¹⁷ website to deal with peak demand during incidents; and
- enhancements to information made available to road users through real-time traffic information channels such as the TransportDirect¹⁸ and TrafficEngland websites, Traffic Radio¹⁹ and via commercial travel information service providers.

12.90 Furthermore, the Review is aware that the MoU between the Highways Agency and the Environment Agency, aimed at better understanding and reducing the vulnerability of the strategic road network to flooding, is in the process of being updated in light of the events of summer 2007. The amended MoU, once finalised, will formalise the contact arrangements between the two organisations at local and national levels. Quarterly meetings are also being held to identify where both organisations can work together more effectively.

12.91 The Review welcomes the positive and pro-active steps taken by the Highways Agency to develop its contingency plans for events, not just flooding, which can lead to severe congestion on the strategic road network and leave large numbers of people stranded. The Review urges the Agency to continue to develop its plans further, especially in relation to the potential for the use of even earlier, stronger and more specific warnings and strategic road clearance and closures,

perhaps beginning a long way from the actual flooded areas, to help mitigate wherever possible the extent of potential disruption on the road network and prevent the risk of motorists becoming stranded in the first place.

RECOMMENDATION 45: The Highways Agency, working through Local Resilience Forums, should further consider the vulnerability of motorways and trunk roads to flooding, the potential for better warnings, strategic road clearance to avoid people becoming stranded and plans to support people who become stranded.

The rail network

12.92 The disruption to the travelling public was not limited to motorists. The Review is aware of a number of incidents that led to the disruption of the rail network as a result of the floods during summer 2007, leaving the public stranded either on trains or at railway stations. The most notable of these was at Gloucester railway station on Friday 20 July when about 500 people were stranded after part of the rail network was suspended due to flooding.

12.93 Network Rail maintains contingency plans to provide for potential disruption to rail services. As the organisation responsible for national rail infrastructure, it also assumes lead responsibility in managing any major incident on the rail network, working with other responders, such as train operating companies,²⁰ British Transport Police and the emergency services. Network Rail is also working with the Environment Agency to enhance the flood warning services it receives and to improve its understanding of the risks and potential impact of flooding on the rail infrastructure. Similar arrangements exist with the Met Office for warnings of adverse weather which may affect the rail network.

¹⁷ www.trafficengland.com

¹⁸ www.transportdirect.info/web2/

¹⁹ The Highways Agency launched its Traffic Radio channel in June 2007. The service is now available on DAB (Digital Audio Broadcasting) and on the internet at www.trafficradio.org.uk and provides traffic information to listeners about traffic conditions on the strategic road network, updated every 10 minutes in peak hours and every 20 minutes outside peak times.

²⁰ As at 1 January 2008, there were 20 franchised train operating companies operating passenger rail services in Great Britain.

12.94 In its submission to the Review, Network Rail advised that:

"[Network Rail] has procedures in place, developed in partnership with relevant agencies, to respond both to flooding and to other extreme weather events to ensure the safety of the network and maintain as much service continuity as possible ... For example, restrictions may be imposed on rail traffic when heavy rainfall and flooding is forecast and experienced. Lines may be closed or diversions and service curtailments introduced. Speed restrictions can be imposed to mitigate landslip risk and routes over river bridges may be closed because of the risk of water undermining the foundations."

12.95 Train operating companies also have contingency plans in place in the event of disruption to rail services and generally take responsibility for their passengers in the event of incidents. At the 18 major 'hub' railway stations run by Network Rail, (for example the main London stations, Manchester Piccadilly, Birmingham New Street and Leeds) this responsibility is undertaken in conjunction with Network Rail. In developing their contingency arrangements, train operating companies draw, as appropriate, on non-mandatory good-practice guidance issued by the Association of Train Operating Companies (ATOC). Previous ATOC guidance addresses situations including those where passengers are stranded on trains in periods of extreme heat, or where on-board air conditioning units have failed.

Passengers stranded on the rail network

12.96 The Review was advised that, in the event of passengers being stranded on a train between stations, Network Rail would work with the relevant train operating company to get the train to a station before off-loading passengers. Only in extreme circumstances would plans to remove passengers from trains between stations be considered. This may involve using a level crossing or other suitable location to remove passengers from the rail network to a place of safety.

12.97 For incidents specific to the railway, such as mechanical or signalling faults, train operating companies would then seek to ensure that affected passengers reach their

destination by alternative transport means if necessary, exceptionally arranging and paying for overnight accommodation in the event that the journey cannot be completed on the same day.

12.98 However, for passengers stranded by events beyond the rail industry's control, such as severe weather or wide area flooding, while the industry would endeavour to assist passengers in reaching their destinations, this may not always be possible for the industry to achieve alone, especially when the emergency has disrupted transport networks more widely. In this instance, the rail industry's role would generally not currently extend beyond getting passengers safely off the rail network; whereupon local authorities, as a Category 1 responder under the Civil Contingencies Act 2004, would assume responsibility. This would involve establishing and transporting people to rest centres, prioritising their needs and directing the response effort accordingly, in conjunction with the emergency services.

12.99 The rail industry informed the Review that, during the floods of summer 2007, the majority of rail passengers affected by disruption to their journey went on to make their own arrangements, often with the assistance of friends or relatives. Only a minority of passengers required further assistance from local authority rest centres. The Review considers, however, that the mechanisms between the rail industry and local authorities for triggering and implementing arrangements for collecting, transporting, dispersing and accommodating rail passengers stranded by the events of summer 2007 were not always clearly understood by responders.

12.100 The Review is aware that train operating companies are generally not obliged to offer compensation as a result of delays outside the control of the rail industry, such as exceptionally severe weather conditions or flooding. The DfT is currently looking to simplify compensation schemes through the progressive introduction of 'Delay/Repay' arrangements as part of the new round of franchise agreements being negotiated with train operating companies. Under these arrangements, all train operating companies will offer the same compensation terms which will apply for all delays, regardless of cause.

12.101 The Review welcomes this initiative, especially for people who may be vulnerable such as the elderly, people with disabilities or those travelling with particularly young children. Such an approach would help to provide reassurance to passengers that, in the event of being inadvertently stranded on the rail network during their journey, their needs would be considered and some level of support provided. Some train operating companies already operate such a scheme. For example, National Express East Coast, which now operates the Intercity East Coast franchise, gives some important commitments in its Passenger Charter.

National Express East Coast – Extract from its Passenger Charter²¹

“Where we believe that because of a delay or cancellation of a National Express East Coast train it will be impossible to get you to your destination at a reasonable time either by train or alternative transport, we will:

- either arrange for you to return to where your journey started, or another appropriate location, and ensure that you can travel again the next day, all at no additional charge; or
- arrange overnight accommodation and ensure that you can travel the next day, all at no additional charge.

In these circumstances if you decide not to travel the following day, i.e. you abandon your journey entirely, we will give you a full refund on the price of your ticket, whether single or return.

If you are delayed by over 60 minutes on any National Express East Coast train, or you are delayed by over 60 minutes at any National Express East Coast station because of a problem with National Express East Coast services, we will offer you a choice of tea, coffee, mineral water or fruit juice with our compliments, while stocks last. If the delay extends to 120 minutes, we will then offer you a choice of a sandwich or a piece of cake with our compliments, while stocks last.”

The provision of emergency welfare on the rail network

12.102 The Review was advised by the rail industry that its plans were geared more to removing passengers from trains in the event of a “*protracted delay*”, rather than have passengers stranded for such extended periods that provision of emergency supplies was required. It was considered conceivable, however, that the industry could arrange the delivery of emergency supplies, such as food, water or blankets, to passengers stranded on a train in exceptional circumstances. For example, Network Rail has had a contractual arrangement in place with the WRVS for a number of years to provide humanitarian assistance, such as refreshments and shelter, in response to incidents on the rail network. However, this arrangement is primarily intended to provide assistance to personnel involved in the response to an incident, as seen in 2007 when WRVS volunteers were deployed to support emergency responders after a train derailment in Cumbria, rather than direct to stranded passengers.

12.103 The rail industry has also established Rail Incident Care Teams – a cadre of volunteers drawn from most train operating companies – who have been specially trained to provide humanitarian assistance to passengers on a 24/7 basis in the event of a major incident on the rail network. However, this assistance is generally only provided to passengers and their families as a result of a serious incident (physical or psychological injury, or death) in the immediate aftermath of an incident and away from the scene of an incident. The Review was advised that such teams would not be used to provide emergency welfare needs to stranded passengers.

12.104 As such, there is no system of providing emergency humanitarian support to rail passengers analogous to that provided by the Highways Agency to motorists stranded on the strategic road network, as described earlier in this chapter.

²¹ www.nationalexpresseastcoast.com/Documents/PDFs/Passenger's%20Charter.pdf

12.105 In the interim report, we proposed that local emergency plans should specifically include incidents which leave large numbers of people stranded on motorways and trunk roads. A submission by Passenger Focus, a statutory body which represents the interests of rail passengers, commented that this approach should apply equally to rail passengers:

“...we wonder whether reference to rail passengers, who have the added disadvantage of not having a vehicle in which they can divert or return home, could be added here ... in exceptional emergency situations, it is not in passengers’ interests if this is just assumed to be a matter for the train operator – and nor is it very equitable if the interests of road users attract greater efforts from public authorities.”

12.106 The Review agrees with this view. While acknowledging that some trains, especially inter-city services, may be equipped with supplies of food and water for its immediate journey, such supplies are likely to be limited and insufficient to service the diverse needs of passengers stranded for an extended period. Other local services may have no such supplies on board. In addition, passengers are less likely to be properly equipped or clothed to deal with the impact of becoming stranded, a situation which could be exacerbated in the height of summer or during winter months.

12.107 The Review considers therefore that the rail industry should ensure that the needs of passengers, who may be stranded on the rail network as a result of disruption to services, are factored into emergency plans. In particular, the rail industry, working through LRFs, should develop plans to identify the nature of emergency welfare support – such as water, emergency food rations and survival blankets – that rail passengers may require in the event of becoming stranded and establish the mechanisms for providing such assistance in an emergency. The particular needs of passengers who may be vulnerable in such circumstances should also be considered.

RECOMMENDATION 46: The rail industry, working through Local Resilience Forums, should develop plans to provide emergency welfare support to passengers stranded on the rail network.

The provision of information on the rail network

12.108 Not surprisingly, the need for early information on the extent and duration of disruption, expressed by motorists affected by the disruption on the road network, has also been communicated to the Review by passengers stranded on the rail network. For example, a member of the public stranded at Bristol railway station following last summer’s floods commented:

“I, like many others, live in Gloucestershire but work in Bristol. When I left for work on the morning of the 20th, I was aware that severe heavy rain was forecast but was not aware of its likely severity – thus like many others, I was stranded at Bristol railway station when the rail services collapsed. During the several hours spent at the rail station, no information of any type was available at all.”

12.109 The Review is aware that the ATOC has previously published good practice guidelines for train operating companies to provide improved information, including announcements at stations and on trains, within set time periods following a train delay incident. An ATOC Approved *Code of Practice – Provision of Passenger Information*,²² was also issued in February 2008, which while not mandatory on the rail industry, provides best practice on providing information to travelling passengers during service disruptions, whether on a train, at or away from a station. Subsequently, a report by the National Audit Office (NAO)²³ published in March 2008, made a number of recommendations aimed at improving the provision of information to rail passengers. In particular, the NAO recommended that:

²² ATOC Approved Code of Practice ATOC/ACOP014 Issue 1, February 2008.

²³ National Audit Office – Reducing passenger rail delays by better management of incidents – March 2008. www.nao.org.uk/publications/nao_reports/07-08/0708308.pdf

“Train Operating Companies should implement the good practice guidelines issued by the Association of Train Operating Companies for the provision of accurate and useful initial information to passengers and the frequency with which passengers should be updated.” And:

“Train Operating Companies and Network Rail should identify and use other means of communicating information, for example through visual displays onboard trains (where technically feasible) and at stations ... and highlight in contingency plans for incidents the need to provide information to passengers.”

12.110 Given that the provision of information to rail passengers during incidents has been extensively considered by the NAO, the Review does not propose to re-visit this issue further here. However, the Review believes that the implementation of the NAO recommendations would assist in reducing the significant difficulties that rail passengers can experience at times of severe disruption, not just from flooding. Furthermore, Passenger Focus told the Review that a major weather problem affecting the rail network, for example in Swindon, had the potential to result in hundreds of people with disrupted plans, perhaps even being stranded distant from the incident in Bristol or at Paddington. **The Review therefore welcomes the NAO’s findings and encourages the rail industry to implement its recommendations urgently, particularly the two recommendations highlighted above on useful information and the means of providing it.**

The role of the Armed Forces

Introduction

12.111 The contribution of the Armed Forces to the emergency response during the floods was welcomed by emergency responders and members of the public, who praised their efficiency and effectiveness. The interim report described how the Armed Forces provided support to the very substantial logistics operation that was needed in order to ensure emergency water provision when the Mythe water treatment works was shut down. This is

covered in more detail in Chapter 11. However, assistance from the Armed Forces went much further than this and this section outlines the role they took and the principles laid down regarding their engagement. Media coverage of the Armed Forces is examined in Chapter 23.

Military Aid to the Civil Authorities

12.112 The CCA provides the framework for the response to civil crises. It defines how organisations, particularly local responders, prepare for emergencies. CCA places a statutory duty on Category 1 responders (emergency services including the police, fire and rescue authorities, the ambulance service and the Maritime and Coastguard Agency, local authorities, NHS primary care trusts and the Environment Agency) and Category 2 responders (utility companies, transport operators, strategic health authorities in the NHS and the Highways Agency) to respond to a disruptive challenge should one arise.

12.113 The Armed Forces’ involvement in civil operations in the UK falls under the umbrella of Military Aid to the Civil Authorities (MACA), and there is no statutory duty placed on the Armed Forces at any level (central, local, or regional) to respond to civil crises. The principles underlying MACA mean that it should only be available on request as a last resort when the civil authorities have exhausted all alternative sources of capability and there are not sufficient resources to cope immediately with an emergency situation. MACA is always subject to the defence commitments of the Armed Forces, who maintain no standing forces for MACA tasks, other than for specialist capabilities, including bomb disposal and search and rescue activities. Thus, a commitment cannot be made that guarantees assistance to meet specific emergencies. During the flooding, assistance from the Armed Forces was administered centrally and also at the request of Gold and Silver Commands.

12.114 Members of the public, noting the effectiveness of the Armed Forces’ involvement during the floods, have suggested to the Review a formal, pre-planned role for the Armed Forces in such operations. However, as MACA makes clear, specific involvement

of the Armed Forces should not be included in plans to fill gaps in civil capability or capacity; where a gap in civil capability can be identified in advance, it is for resilience planners to fill that gap. However, it is recognised that during a disruptive challenge, unforeseen failures of the resilience plan or events in excess of planning assumptions, may generate requests for aid from the Armed Forces.

The funding of Armed Forces assistance

12.115 The provision of assistance from the Armed Forces where there is an immediate threat to life is paid from the central Ministry of Defence (MoD) budget. As such, the cost of rescue work undertaken by the Armed Forces in Yorkshire and Humberside during the summer of 2007 was absorbed by the MoD.

12.116 However, according to HM Treasury (HMT) rules, government departments must charge for services that do not form part of their funded tasks. No matter how valid a request for assistance may appear, defence funds are granted for defence purposes only and where work is done by the Armed Forces for other purposes, the MoD is required by HMT rules to secure reimbursement for the costs incurred. Therefore, unless the work undertaken provides training opportunities in defence-related tasks, costs must be reimbursed by the recipient of the service, for example the local authority or the utility company.

12.117 The majority of the work undertaken by the Armed Forces in south-west England was of a general nature, not offering training opportunities, and was connected to securing electricity infrastructure at Walham and Castle Meads electricity substations and helping to re-establish mains water at Mythe water treatments works, as well as distributing water to those affected and assisting communities by filling sandbags. As such, costs of Armed Forces assistance in the South West fell to a number of organisations, some of whom could claim back the costs under the Bellwin scheme.²⁴ This scheme, funded by central government via Communities and Local Government, may be activated where local authorities have spent money taking immediate

action to safeguard life or property or to prevent suffering or severe inconvenience in the response phase of the emergency. The Bellwin scheme is discussed further in Chapter 28.

12.118 To allocate the costs properly to the appropriate party, accurate records of the number of Armed Forces personnel and how long they were engaged in each task are necessary and the Armed Forces' detailed records were praised by government officials facilitating this process. Although calculating the relative costs falling to each organisation can be a complex accounting process, the existing procedure was thought to work well after the floods.

12.119 Evidence to the Review shows that an early Ministerial statement that Armed Forces assistance would be centrally funded (as was appropriate during the search and rescue phase) was helpful and provided reassurance to responders that costs would not be incurred, which, although not the prime concern during an emergency, can ease apprehension and reduce administrative burdens on the ground.

Activities of the Armed Forces during the floods

12.120 The Armed Forces undertook a wide range of activities during the floods. In the north of England, hundreds of personnel were involved and in Gloucestershire over 1,000 personnel across all Forces took part in the response over an 11-day period, comprising 311 members of the Royal Navy, 444 of the Army and 272 Royal Air Force personnel.

12.121 To coordinate actions agreed by Gold and Silver Commands, Armed Forces representatives, known as Joint Regional Liaison Officers (JRLOs), sat on these coordination groups across the affected areas. Given the large deployment, and the overriding Armed Forces commitment to defence tasks, the Review was asked whether the Armed Forces would be able to field JRLOs in a widespread, perhaps national, incident with many more coordination groups involved. On this matter, the Armed Forces reassured us that

²⁴ www.communities.gov.uk/fire/resilienceresponse/floodrecovery/faqs/localauthorities/bellwin/?id=645866#question

commanding officers of units in their Brigade areas were trained in the JRLO role and could therefore easily be provided in sufficient numbers if required.

Search and rescue

12.122 Search and rescue was the first activity carried out by the Armed Forces using both helicopters and assault boats. Across the north of England, assault boats were used to rescue people and at Thorpe Marsh Power Station in Doncaster they were used to provide access for fire and rescue service and National Grid personnel and equipment. In Leconfield, the Armed Forces helped to evacuate vulnerable people from their homes. Aside from emergency rescues, assault boats manned by the Armed Forces and fire and rescue personnel also provided reassurance patrols to ensure communities were safe.

12.123 In the South West, up to eight helicopters were operating at a single time, including those of the MCA. All the helicopters were coordinated by the Aeronautical Rescue Coordination Centre at RAF Kinloss in Scotland. The scale of the airborne activities was substantial, and included rescuing over 193 people in 68 separate incidents in the first six days. Helicopters were crucial in rescuing people from roofs and areas inaccessible to ground-based rescue services.

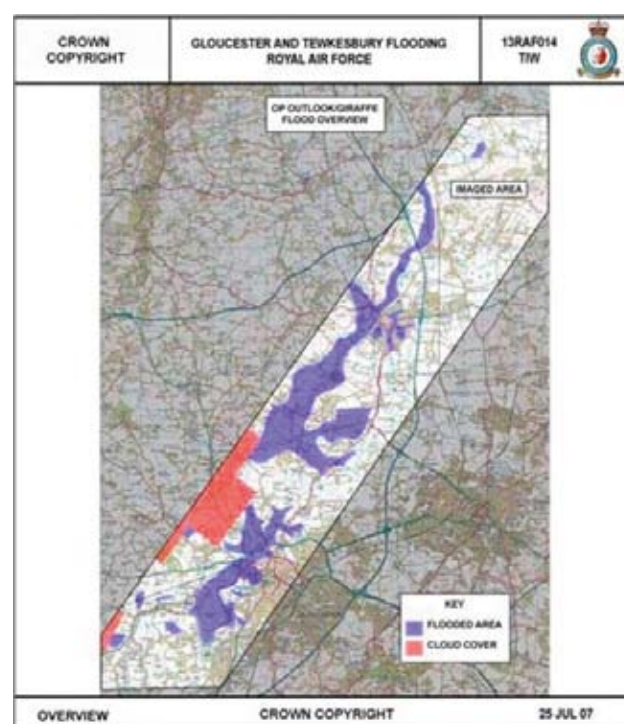
12.124 The Signals Regiment played a useful role providing communications to ensure that the Armed Forces could work in a civilian-led operational situation and providing, where required, both Armed Forces communications and Airwave (a digital communications network) to some civil agencies.

Air assets

12.125 As well as utilising Armed Forces helicopters for search and rescue, air assets were used widely to great effect during the floods. At Ulley Dam in South Yorkshire, a Chinook helicopter was used to transport high volume pumps to assist in lowering the level of the water when a dam breach appeared imminent. In Bentley near Doncaster, the Chinook was again used to lift aggregate to shore up the banks of the River Don.

12.126 In the South West, a Tornado aircraft on exercise in the area flew over the region and provided aerial imagery (see Figure 9) to Gold Command to assist responders, helping to inform the assessment of the scale of impact of the floods. The Review has been informed that this valuable service was offered rather than being requested and this suggests that responders should be made aware that this facility exists, although, as outlined above, any Armed Forces contribution cannot be guaranteed in a particular situation.

Figure 9 – RAF photo by Tornado flyover superimposed on 1:50,000 map



Building flood defences

12.127 Emergency flood defence work carried out by the Armed Forces ranged from the extensive filling of sandbags to help protect people's homes through to the building of large semi-permanent barriers around utilities infrastructure at Mythe water treatment works and Walham electricity substation. The value of the flood defences built at Walham on 22 July was enormous since they averted its inundation, which could have caused a large-scale power outage across the region.

12.128 Once the flooded Mythe water treatment works had drained on 26 July, the military assisted in building 1,000 metres of stone-filled semi-permanent flood barrier to avoid further flooding of the facility.

12.129 Armed Forces engagement continued until 30 July when the situation was sufficiently improved for them to be stood down.

Distribution of bottled water

12.130 When Mythe water treatment works flooded, Severn Trent Water was faced with a water distribution problem far greater than they had planned for; 350,000 people required alternative water supplies from bottles or bowzers. The provision of emergency water supplies is discussed further in Chapter 11.

12.131 Given the requirement to provide 10 litres of water per person each day, the scale of the supply and distribution challenge was clear. An Armed Forces logistics team at Gold Command set up bottled water storage at Cheltenham racecourse; photographs of the area demonstrate the size of the operation, with a substantial portion of the race track covered with pallets of bottled water. The logistics team also advised on the setting up of 24 distribution points across the region, mainly in supermarket car parks where the public could easily access their provision. As well as bottled water, 1,400 bowzers were used and Armed Forces logistics provided invaluable advice on their replenishment, which was carried out up to three times a day by a series of tankers, including some military tankers.

12.132 The Armed Forces have articulated to the Review that the “*flat management structure*” in Severn Trent Water, and probably in the utilities generally, meant that the organisation had a limited ability to plan and understand how to get the resources needed once the emergency had begun. This led to the onus falling on the Armed Forces to employ lateral thought, for example suggesting the use of an alternative bowser filling point near Bristol to minimise the distance that needed to be travelled to replenish supplies.

12.133 The Armed Forces have highlighted to the Review that considerable reliance was placed on them to act in the place of a Category 2 responder (the water company) under the Civil Contingencies Act 2004. On this occasion the Armed Forces coped well. However, fulfilling this role in future crises covering wider areas or multiple locations could severely stretch defence resources. Accordingly, the Review believes that the water industry should develop its logistics expertise to effectively cope with future wide-area emergencies.

12.134 Although the MoD is neither a Category 1 or 2 responder, nor the nominated lead government department for responding to civil emergencies, it is clear that Armed Forces personnel possess a wide range of logistics experience, expertise and knowledge which may be useful to Gold commanders during wide area emergencies, as well as to local and regional resilience forums and lead government departments in the emergency planning stage.

12.135 Inevitably, despite careful planning, some emergencies will stretch established capabilities to their limits. In case of such scenarios, the Cabinet Office and the MoD should identify how the experience and expertise of Armed Forces personnel could be utilised and made available to emergency responders, for example by identifying a small number of trained logistics personnel, who would be available to Gold Commands in an advisory capacity during a wide-area civil emergency. The Review stresses however, that the MoD and the Armed Forces should never be assumed as the lead for responding to civil emergencies. It is for emergency responders to plan for and respond to civil emergencies.

RECOMMENDATION 47: The Ministry of Defence should identify a small number of trained Armed Forces personnel who can be deployed to advise Gold Commands on logistics during wide-area civil emergencies and, working with the Cabinet Office, identify a suitable mechanism for deployment.

The Civil Contingencies Reaction Forces

12.136 The Review has been asked why the Civil Contingencies Reaction Forces (CCRF), thirteen 500-strong groups of volunteers from the Territorial Army capable of being mobilised at short notice to assist in dealing with a major civil emergency such as the floods, were not mobilised. Behind the question was the suggestion that help was not brought in as quickly as it might have been if the CCRF had been used.

12.137 The Review has been advised by the MoD that the use of CCRFs was considered but that it would have taken longer to mobilise the CCRFs than it would to deploy regular forces to the scene. Since time was of the essence, regular Armed Forces personnel were used. Further, after the first 24 hours the majority of the work undertaken by the Armed Forces required specialist skills which the CCRFs did not have – for example engineering skills to construct semi-permanent flood defences and logistics specialists for the distribution of water supplies. Finally, any reserve personnel in the local area may have had other responsibilities in the community which would have been lost if they had been called up.



The national response

This chapter examines the role of central and regional government in preparing for and responding to the emergencies. It contains sections on:

- central government crisis machinery;
- information management;
- Defra – the role of the lead government department;
- exercising; and
- regional leadership.

Introduction

13.1 Although flooding is predominantly a local emergency, larger-scale events, such as those witnessed during summer 2007, often require support at regional and national levels. The exceptionally large scale and variety of the summer 2007 floods, coupled with the consequent widespread disruption of essential services, made the regional and national efforts integral to the response.

13.2 Central government's response to each of the string of major emergencies that occurred followed the guidance laid down in *Central Government Arrangements for Responding to an Emergency*.¹ This distinguishes between incidents which are primarily managed locally, with little or no central government engagement, and those that require closer working with central government, either

primarily through the lead government department or, where there is a need for wider government involvement, through the activation of central crisis arrangements and facilities such as the Cabinet Office Briefing Rooms (COBR).

13.3 The Review considers that overall there was strong collaborative working and cooperation between government departments and agencies during the 2007 floods and that the central response was effective and coordinated. Certain departments played a particularly prominent role, notably Defra as the central government department with lead responsibility for flooding, Communities and Local Government (CLG) as lead government department for the recovery phase, and the Cabinet Office.²

¹ <http://www.ukresilience.info/~media/assets/www.ukresilience.info/conops%20pdf.ashx>

² The Civil Contingencies Secretariat sits within the Cabinet Office and works in partnership with government departments, the devolved administrations and key stakeholders to enhance the UK's ability to prepare for, respond to and recover from emergencies.

Central government crisis machinery

13.4 The flooding in June 2007, although undoubtedly serious, was judged on the basis of initial reporting from the Environment Agency to be within the capacity of local responders to manage. COBR was not therefore formally activated, although consolidated briefing on the situation was produced and circulated by the Cabinet Office to all government departments, and Defra (with the Environment Agency) provided a continued oversight of the response. There was, however, recognition, based on experience from the flooding in Carlisle in 2005, that the major challenge was likely to be during the recovery phase. The central government focus was therefore placed on confirming CLG's leadership of cross-government activity to support recovery efforts in the affected areas, and on ensuring that financial and other support was made rapidly available.

13.5 COBR was activated during the July 2007 floods. The trigger was a forecast by the Environment Agency – which turned out to be broadly accurate – that the scale of the flooding would be severe and on a par with that in 1947. As well as the direct flooding emergency, COBR was used for the succeeding civil emergencies, including the prolonged interruption to water supplies following the loss of the Mythe water treatment works and the threat to Walham electricity substation, as well as later flooding events in the Thames Valley. Each of these events was expected to require significant central government support from a number of departments to the local multi-agency response. This proved to be the case.

13.6 The activation of COBR in July 2007 was welcomed by Gold Commands, and played an important role in the achievement of improved performance. Departments felt that the response was better coordinated and more focused than had been the case in June 2007. While it would be wrong to say that the non-activation of COBR in June was a failure, it is certainly right to say that its activation in July enhanced the overall response. This experience points to the desirability of earlier activation of COBR on a precautionary basis in the future in the event of serious flooding. This would facilitate access by local responders to

central government and would ensure a better understanding of the evolving situation.

13.7 Stakeholders, including Defra and the Environment Agency, agree with this analysis: however, because central crisis machinery is very resource intensive, they also add that any response needs to be proportionate and should not be escalated beyond the requirements of the event – activation of central crisis machinery should add value. The Review considers therefore that Defra's Lead Government Department Plan should be amended to reflect the activation of central government crisis machinery in response to high-impact flooding, with the provision of supporting guidance on the definition of the term 'high impact', as the trigger for activation of central government crisis machinery.

RECOMMENDATION 48: Central government crisis machinery should always be activated if significant wide-area and high-impact flooding is expected or occurs.

Information management

13.8 After the summer 2007 floods, although local responders generally appreciated central government's need for local information, the Review has learned that they were frustrated by the volume of information requested and the time it took to collate. On the other hand, central government was concerned by the lack of agreement on the extent of the flooding and the scale of the damage. This matter is discussed in greater depth in Chapter 27.

13.9 Discrepancies in information can be partly explained by the different locations and timings of reporting and the widespread nature of the flooding. They may also reflect instances where Gold Commands were not established to provide the strategic dimension. However, they do raise questions over the extent to which there was a coherent understanding on the scale and extent of the problems faced. While accurate figures will inevitably take time to collect and data collection must take a lower priority to saving life, rough estimates of the scale of damage need to be made available to allow scarce resources to be effectively prioritised. This data also needs to be sufficient to meet central government's immediate needs.

13.10 The confusion experienced in June 2007 suggests that for surface water flooding events, central government should seek information via Government Offices from local authorities in the first instance. Data from the Environment Agency and the ABI should be used as supplementary evidence to gauge the extent of potential damage.

13.11 It would also be helpful to be clearer about what data is needed, who is responsible for providing it and when. Evidence to the Review shows that some protocols were in place for information gathering and reporting during the response and then in the recovery phase, including an agreed template which was completed via the Government Offices in the affected regions. However, there was limited awareness that this system was in place.

13.12 A further issue is the handling of information once it reaches central government's crisis machinery. Information presented to ministers through the Common Recognised Information Picture (CRIP) – the mechanism used in the COBR for providing an up-to-date situation report of the emergency – was on occasions inaccurate during the summer 2007 floods. The Review believes that closer working between Defra and the Environment Agency, as discussed below, will remedy this and urges both parties to address this matter.

Defra – the role of the lead government department

Defra's performance

13.13 As the designated lead government department for flooding, Defra was at the heart of the Government's response to the summer 2007 flooding. It discharged this role with commitment, working with other departments and the Environment Agency.

13.14 However, Defra's response took time to settle into an effective pattern. This was essentially due to the unprecedented nature of the floods and the way in which the July 2007 flooding events rapidly led on to a much more serious emergency, affecting essential services and critical infrastructure (and thus going well beyond Defra's day-to-day responsibilities).

13.15 The careful and effective response to the possibility of East Coast flooding in November 2007 shows that both Defra and the Environment Agency had already learnt lessons and improved their level of performance.

Sharing best practice

13.16 As well as having lead government department responsibilities for flooding emergencies, Defra has important emergency responsibilities in relation to animal disease and other significant risks and there is now a significant body of expertise and experience within the department which should be captured and shared.

13.17 An interim conclusion of the Review was that Defra extends its current departmental programme to share best practice and provide training in emergency response across the organisation. The Government agrees with this conclusion and the Review is pleased that Defra will now take this forward as part of their ongoing programme of work. This will ensure that Defra has the ability to learn lessons from emergency exercises and real events; it will spread good practice and help retain knowledge; and it will ensure a consistent approach across Defra to the response to emergencies where applicable. Defra will also hold an internal cross-departmental learning event during 2008 on responding to emergencies.

Working relationships between Defra and the Environment Agency

13.18 Defra's position was further complicated by the operational–policy split of responsibilities between it and the Environment Agency. However, the relationship was generally productive and there is no evidence to support a need to draw the Environment Agency more closely into the department following the summer 2007 events.

13.19 Nevertheless, experience from other emergencies shows the efficiency benefits that come from single site coordination of key information gathering and decision-making. Despite their close working relationships, a separate Environment Agency control room and individual policy teams in Defra had to work harder than necessary in order to deliver coherence.

13.20 In the interim report we suggested that coherence could in future be better achieved if staff representing key divisions in Defra and the Environment Agency were co-located together to support decision-making and to work with ministers in their representative role. Our interim conclusion was that Defra and the Environment Agency should work together to establish a single London situation room to coordinate flooding information, to act as a focal point for cross-Defra efforts and to support Defra ministers. We also stated that to succeed, this enhanced coordination and communication effort would need to be supported directly by the top management teams of both organisations. Analogous and effective arrangements to bring together Defra and its Animal Health agency in the response to major animal diseases were cited.

13.21 Defra and the Environment Agency agreed with this interim conclusion, with modification, agreeing to work together to deliver the conclusion's intention. As part of this work, and in support of its cross-government lead department role for flooding, Defra will develop plans for using its Emergency Operations Room. However, the Government considers it can meet the intention of this recommendation without necessarily establishing a single London situation room. It is proposed by Defra that this can be achieved by closer joint working and information sharing, while allowing both organisations to continue to manage the flooding situation to meet their differing operational requirements, and within their own managerial space. To this end, the Environment Agency has offered to provide a Strategic Liaison Officer to support Defra's work in a major flood. If the intention of our conclusion is delivered by this arrangement, the Review is content. **However, we would welcome the Government continuing to review the effectiveness of this arrangement over time and if it is not delivering the intention of our conclusion, co-location in a single London situation room should be reconsidered.**

Planning for emergencies: a national framework

13.22 The split of responsibilities for flooding between Defra and the Environment Agency,

along with the very local nature of flooding impact, means that direct comparisons with other national emergencies such as foot-and-mouth disease or pandemic influenza need to be made cautiously. Nevertheless, there are some national-level planning and response techniques used in other areas which could have obvious benefits for the response to flooding events.

13.23 The fragmented, locally-focused nature of planning for the response to the 2007 floods is one such issue. While this did not materially affect the quality and effectiveness of the local response, time was spent dealing with issues which could have been pre-determined centrally. In other areas (such as pandemic influenza), such issues are addressed within a single national framework – a model in which the lead government department brings together information, guidance and key policies in a single strand of planning, thus providing a resource for all tiers of government and key external partners. It is not an emergency plan, but it does bring coherence and identify key prior decisions. The Review believes that capturing work across government in this way would be equally sensible in relation to flooding.

13.24 In this respect, the interim report recommended that, in order to effectively fulfil its lead government department role for flood risk management and emergency response, Defra needed to urgently develop and share a national flood emergency framework. In an open letter in April 2008 to the Secretaries of State on progress of the urgent recommendations in the interim report, the Review acknowledged that Defra had completed a review of its Lead Government Department Plan in December 2007 and issued new guidance on producing multi-agency flood plans in early 2008, which provided a sound basis for developing a national flood emergency framework. Defra explained that an outline national framework was at an advanced stage of preparation, and should be in a position to be finalised in the autumn.

13.25 However, the Review now notes, with regret, that the framework will not be ready in the stated timeframe. The Review has since been advised that, while central

government accepts that such a framework for flooding is essential, it believes that written guidance alone will not bring about the long-term, cultural change that is required and the full implementation of a programme to develop information, guidance and key policies in a single strand of planning, may take until 2010 to fully implement. The Review acknowledges this, with regret, and suggests that Defra, with support from the Cabinet Office, should urgently develop a project plan with a view to implementing a national flooding emergency framework, incrementally if necessary, within clearly defined timescales.

Exercising

National exercises

13.26 The improvements which Defra was able to institute before the July 2007 floods reflect the learning experiences of many of those involved in the June events. This demonstrates the benefit of experience when framing any response. This experience can come in two ways – through dealing with actual emergencies or through exercises. Because relying on experience of actual emergencies alone may risk dissipation of experience and expertise, the Government has a wide-ranging exercise programme to ensure that experience gained is sustained.

13.27 The last national flooding exercise was Exercise Triton in 2004. The exercise scenario covered an extreme event with extensive coastal flooding affecting nearly half of England and Wales. The Review notes that, as of June 2008, another national flooding exercise is not due until 2010 and in the interim report we suggested that this exercise might be brought forward. Evidence subsequently received strongly suggests that Category 2 responders and the voluntary sector should be included in the exercise and that ‘consequence management’, or the recovery phase of an emergency, is exercised as well as the emergency response. Evidence also strongly suggests the inclusion of the regional and local levels in the exercise. Further, submissions request that extreme or ‘worst case scenarios’ should be exercised, perhaps including flooding at night or at a weekend, or concurrent emergencies. **We welcome all of these suggestions being considered, noting**

that they should be driven by the risks identified in the national risk register and local assessments.

13.28 We have received evidence that some national exercises are not as well coordinated, planned, and inclusive as they could be and that quality differs between the lead government departments taking them forward. In part, this could be a matter of resources. It could also indicate different levels of knowledge and expertise in exercising across government. **This situation might benefit from central guidance and the Review would welcome the Cabinet Office, which oversees preparedness activity across government, considering this proposal further.**

13.29 In response to the Review’s interim conclusion, the Government has informed us that there is a substantial lead time for a national exercise, especially if national crisis machinery, including COBR, is to be used. Defra has informed the Review that a plan for a flooding exercise which will set out when it will be conducted will be formulated by the end of October 2008. Work will then begin on planning a national exercise that will test key components of the arrangements which will be set out in the national flood emergency framework in due course, and the Defra Lead Government Department Plan.

RECOMMENDATION 49: 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.

Local and regional exercises

13.30 While national exercises are coordinated by lead government departments with support from the Cabinet Office, there are no structured arrangements in place at the regional and local level to compare the scheduling of exercises and to ensure that experience and learning is shared more widely, including with other regions. This can lead to exercises taking place with similar responders at the same time. Similar scenarios may also be held in isolation in different regions, having been planned and

carried out without incorporating the lessons learnt elsewhere. Exercises are, in effect, being duplicated. While there is an argument for responders learning their own lessons in exercises, we also believe that exercises should build on those held previously in other areas.

13.31 It has been suggested to the Review that to avoid exercises ‘clashing’, CLG, with the support of the Government Offices, could share exercise diaries across regions and localities and with central government departments. This would also allow exercises to be scheduled at appropriate times to incorporate lessons from previous exercises. **The Review would welcome this suggestion being considered by CLG.**

13.32 Further, to draw on lessons learnt, **the Review would welcome consideration of the proposal that organisers of exercises publish a ‘lessons identified’ report and circulate it to all players as well as posting it on their website.** Since the published report might be unable to contain sensitive details that would be helpful to responders, lessons could also be shared between LRFs in a region and the Government Office or Regional Resilience Forums might be able to facilitate this process. A further suggestion is that the Emergency Planning College’s library might act as a repository for exercise information, including lessons learnt. **As the potential remit of these proposals goes much further than just flood emergencies, the Review has not explored this in detail, however, we would welcome CLG and the Cabinet Office examining the proposals.**

13.33 Based on submissions received by the Review, we would welcome planners of local and regional exercises considering including Category 2 responders and the voluntary sector to a greater degree as an integral part of exercise programmes. Subject to reflecting local risk assessments, planners of exercises should also consider testing extreme scenarios, as described above in relation to national exercises. Community exercises might also include volunteer members of the public to test this aspect of

resilience. This would include working through the planning stages with key members of the community involved.

Scientific and Technical Advice Cells

13.34 Scientific and Technical Advice Cells (STACs) are the provision for Gold Commanders of a single point of advice on matters of public health – and their value was reinforced by the events of summer 2007. Local STACs were established to support Gold Commands in Yorkshire and Humber, the West Midlands and Gloucestershire. A national STAC was also set up during the floods to advise central Government, especially the debate in COBR.

13.35 The concept of STACs worked well, but a number of issues were raised, not least in the area of public health protection where there was confusion over the respective roles and accountabilities in law of staff of the Health Protection Agency, primary care trusts, strategic health authorities and, following the loss of mains water supplies in and around Gloucestershire, the Drinking Water Inspectorate (DWI) and their interface with Gold Command.

13.36 Furthermore, some experts were asked to attend both local and national STACs, which led to competing demands on their time and stretched resources. It was unclear to some whether the role of the national STAC was to provide advice on the same issues being considered by the local STACs, or to provide support in areas that could not be handled by the local STACs. Similarly, it was unclear whether decisions made at the local level had to be signed off by the national STAC.

13.37 Confusion at the STAC in Gloucester centred on roles and responsibilities in deciding when the mains water supply could be restored. The DWI was not initially invited to advise the work of the STAC and became involved only when it requested participation. Subsequently the DWI also participated in the national STAC and provided authoritative technical water supply advice. However it was unclear how the national advice was being applied at the regional level. The DWI’s investigation into the

incident estimated that the delay in the return of a piped water supply was approximately one to two days.

13.38 The interim report noted that STAC guidance was not sufficiently clear about how roles within the STAC should be discharged and stated the urgent need for a clearer definition of these roles to be provided.

13.39 In this respect, the Review is pleased to note that guidance³ to the National Health Service (NHS) in England on providing strategic command arrangements across the healthcare sector was released in December 2007, updating roles and responsibilities for NHS organisations during major incidents. The guidance specifically clarifies the role of the strategic health authority as the principal healthcare system manager during a crisis. Local responders have already begun incorporating the new advice into their planning activities, which should lead to greater consistency and improved awareness of the role which health service organisations can play.

13.40 The Review has been advised that the Department of Health is continuing to work closely with the Cabinet Office to further develop STAC guidance at the local, regional and national levels, including clarifying the roles of central advice and that of other health agencies. This guidance is due to be published later in 2008. **Stakeholders have urged that, once this advice is published, responders at all levels, including potential Gold Commanders, should familiarise**

themselves with the advice and in due course take part in exercises involving a STAC, as appropriate – the Review would welcome this approach.

Regional leadership

13.41 Regional Civil Contingencies Committees (RCCC) were activated in the South West region on 23 and 24 July as a precaution against the potential wide-area impacts of power loss that would have occurred had Walham electricity substation been flooded or closed down. These were the first RCCCs activated since the Civil Contingencies Act 2004 came into force.

13.42 The Review has heard evidence that, regionally, the reasons for activating the RCCC were not widely appreciated and there was some uncertainty in responders' minds over the RCCC's authority and relationship with COBR. Some people wrongly believed that the RCCC had a command and control function above Gold Command, rather than being a structure for coordinating the regional picture and liaising with central government. It appears to have been sensible for the RCCC to meet when it did and to step it down once it was clear that widespread power loss had been avoided.

13.43 **The Review welcomes work by the Cabinet Office and CLG to explain the situation to local responders, drawing on the events of the summer and the role and purpose of RCCCs.**

³ www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_081507