



GOVERNMENT OFFICE
FOR THE NORTH WEST



COUNTY COUNCIL



Maritime and Coastguard Agency



www.carlisle.gov.uk



ENVIRONMENT
AGENCY



GOVERNMENT NEWS NETWORK

Carlisle storms and associated flooding

Multi-agency debrief report
Executive summary

Issued on 14 July 2005

PREPARING FOR EMERGENCIES



IN THE NORTH WEST

Contents

Introduction	3
Background	4
The multi-agency debrief – the approach	11
Pre-alert and alert stage	14
Functioning of Gold and Silver Command	16
Responders	18
Communications and information for decision makers	19
Co-ordination of resources	21
Public information / media	23
Business continuity	25
Planning, exercises and training	26
Conclusions	27

INTRODUCTION

This executive summary report contains the outcomes of the multi-agency debrief into the emergency response to the storms and resulting flooding that affected Carlisle in January 2005. It is recognised that the January Storms affected most parts of Cumbria, resulting in storm and flood damage in many other areas. However, this report primarily addresses the situation in Carlisle as this was the most severely affected area and the focus of the multi-agency response.

This report does not describe in detail what the responding organisations and agencies did or the individual challenges they faced. However, it does provide a summary of the events that took place and how they were handled. The report examines the most and least successful aspects of the emergency response, and highlights potential areas of improvement to the response to future incidents. No assessment has been made as to whether these would have resulted in an enhanced response, and no judgement is being made on the response to the storms and resulting flooding.

This report does not cover the outcomes of the recovery phase that followed the handover of responsibility from Cumbria Police to Carlisle City Council. The recovery phase is still ongoing, and it would therefore be premature to carry out a recovery debrief at this time. The recovery phase will, however, be the subject of a separate debrief to be conducted in summer 2005 led by Carlisle City Council.

Members of the public have not been consulted during the production of this report and this is an area that responders may wish to consider as part of the recovery phase debrief process.

The recommendations in this report will be taken forward by the Cumbria Resilience Forum in liaison with regional and national organisations as necessary. Cumbria Resilience Forum, along with others across the country, will also be considering the implications of the Civil Contingencies Act that received Royal Assent in November 2004. This act will, in itself, require responder organisations to review and possibly amend their processes and procedures in responding to future incidents, and many of the recommendations made here will overlap with the requirements of the Act.

Whilst the production of the report has been co-ordinated by the Government Office for the North West Regional Resilience Team and some sections written by it, the recommendations contained within the report are those of the responders to the emergency and not necessarily endorsed by Government at this stage.

This executive summary report can be found on the UK Resilience website at www.ukresilience.info and on the Preparing for Emergencies website at www.pfe.gov.uk. The full debrief report can be found on the UK resilience website. The Regional Resilience Team can be contacted for further information on 0161 952 4135 or via e-mail at rrt.gonw@gonw.gsi.gov.uk

BACKGROUND

Command and Control Arrangements

The command and control arrangements adopted for this incident were the normal police led Gold, Silver, Bronze structure, the principles of which are explained below.

Principles of Command and Control

The management of the response to major emergencies will normally be undertaken at one or more of three ascending levels – Operational, Tactical and Strategic – that are defined by their differing functions rather than by specific rank, grade or status.

The terms ‘Bronze’, ‘Silver’ and ‘Gold’ (for ‘operational’, ‘tactical’ and ‘strategic’ respectively) are in common use in many organisations, particularly the emergency services

At the start of an incident the operational level will be activated first. Escalation or a greater awareness of the situation may require the implementation of a tactical level and, finally, a strategic level should this prove necessary.

In major incidents where there is an incident scene – or scenes – the police usually assume the role of overall co-ordination of all other organisations and agencies during the emergency response.

The response to the Carlisle storms and associated flooding led to the implementation of all three levels of command, and the terms Bronze, Silver and Gold were used by the organisations involved in the emergency response. These terms feature throughout the multi-agency debrief report.

During the emergency, Gold Command was situated at Cumbria Police Headquarters in Penrith. Silver Command was situated at the Emergency Planning Unit in Carlisle Castle. A number of Bronze commands were established during the flooding - these were at Warwick Road (East and West), Willowholme and for a time, at Denton Holme, and Warwick Bridge.

Carlisle - The location

Carlisle is the principal conurbation in north Cumbria (Figure 1). The city is situated on the River Eden where two significant tributaries, the Caldew and the Petteril, both of which are prone to rapid flooding, join the main river. The city has been the site of flooding for many years although the substantial flood defences that have been constructed have, in the main, reduced its immediate effect upon the city. The flooding experienced in January 2005, however, resulted in water levels one metre above the 1822 flood mark (the previous highest flooding levels experienced in Carlisle).



Figure 1: Map of the North West of England showing the location of Carlisle

The Build Up to the Storms

On Thursday 6th and Friday 7th January 2005, the Meteorological Office issued severe weather warnings as part of their normal daily weather forecast service. Initially they forecast mean average wind speeds of 45mph and maximum gusts of 60–80 mph, with heavy rainfall of 100mm in the following 3 days. A warning was subsequently issued at 1529 hours on 6th January indicating 120 mm in 24 hours with a 30% probability of 150mm. During discussions between the Meteorological Office and Environment Agency on the night of 6th/7th January, the Met Office also suggested that 200mm of rainfall over Honister was possible during the event. This level of rain across the central fells is not unusual. In addition, the Meteorological Office issued a very rare Emergency Flash warning on Friday afternoon warning of winds of 80-90 mph.

Flood watches for all catchments were issued by the Environment Agency at 1600 hours on Thursday 6th January. Flood Watch updates started to be issued to emergency responders and the media at 1100 hours on Friday 7th January, with the first Flood Warning issued (River Eden at Appleby) at 1310 hours on Friday 7th January.

In the event, over the evening of Friday 7th January, gales of 70 to 80 mph were common place with gusts recorded at 97 and 128mph at Great Dunn Fell. In addition, over a 36 hour period, some parts of the Central Lake District received up to 225 mm of rain which fell on ground ready saturated by previous rainfall. In the River Eden catchment, up to 175mm of rain fell in this same 36 hour period. The Fire Service received calls for assistance due to flooding which primarily originated from the Kirkby Stephen, Appleby, Shap, Penrith, Keswick, Cockermouth, Longtown and Carlisle areas. A large proportion of the calls involved the rescue of people from flooded property.

The high winds and rain also affected other parts of the county, particularly in the Barrow in Furness area where structural damage to buildings was of noted significance.

The Cumbria County Council Emergency Control Centre was activated at approx 2330 hours on Friday 7th January to respond to any requests for Reception Centres to be activated due to flooding in other areas of the County.

The Initial Impact

The following extracts, taken from the Search, Rescue and Evacuation debrief report, are used to set a time line and convey the general picture of the emergency situation to which all agencies were, at various stages and locations, responding over Friday night and into Saturday.

"The first reports of flooding in the Carlisle area were received from Cumwhinton at 2250 hours on 7th January. This was caused by a highway drainage problem. The first reports from within the confines of the city were received at 0020 hours on 8th January and involved the evacuation of 40 people from a club in Gilford Park where the access road was flooded at the underpass beneath the Main West Coast railway line. This was caused by a problem with highway drainage combined with some flooding from the adjacent River Petteril. The club itself was not affected. Almost simultaneously at 0024 hours, reports of flooding were received from Newmarket Road in Carlisle where the cellar at the Turf Inn had been inundated. The flooding of the cellar from groundwater sources is a regular occurrence during minor flooding incidents. Flooding directly from the River Eden did not occur at the Turf Inn until 0830 hours on Saturday 8th January. By 0230 hours requests for assistance were being received from the Caldewgate area of the city. Various report were also received during the night from Harraby Green and Botcherby districts initially from the surface and groundwater flooding, and subsequently as the River Petteril burst its banks.

In Denton Holme flooding occurred from a number of sources. On the left bank, flooding began shortly before 0200 hours, and was caused by a tree obstructing the South Vale footbridge, on the River Caldew. On the right bank, the gasworks area began flooding from around 0200, due to a damaged wall, and subsequent overtopping of the defences.

Further downstream, below Victoria Bridge, CCTV and video evidence collected after the event shows that initial flooding on the right bank was from manholes

surcharging. The left bank (Shadongate) was affected from approximately 0200 by flows from the Dow Beck culvert and sewer flooding.

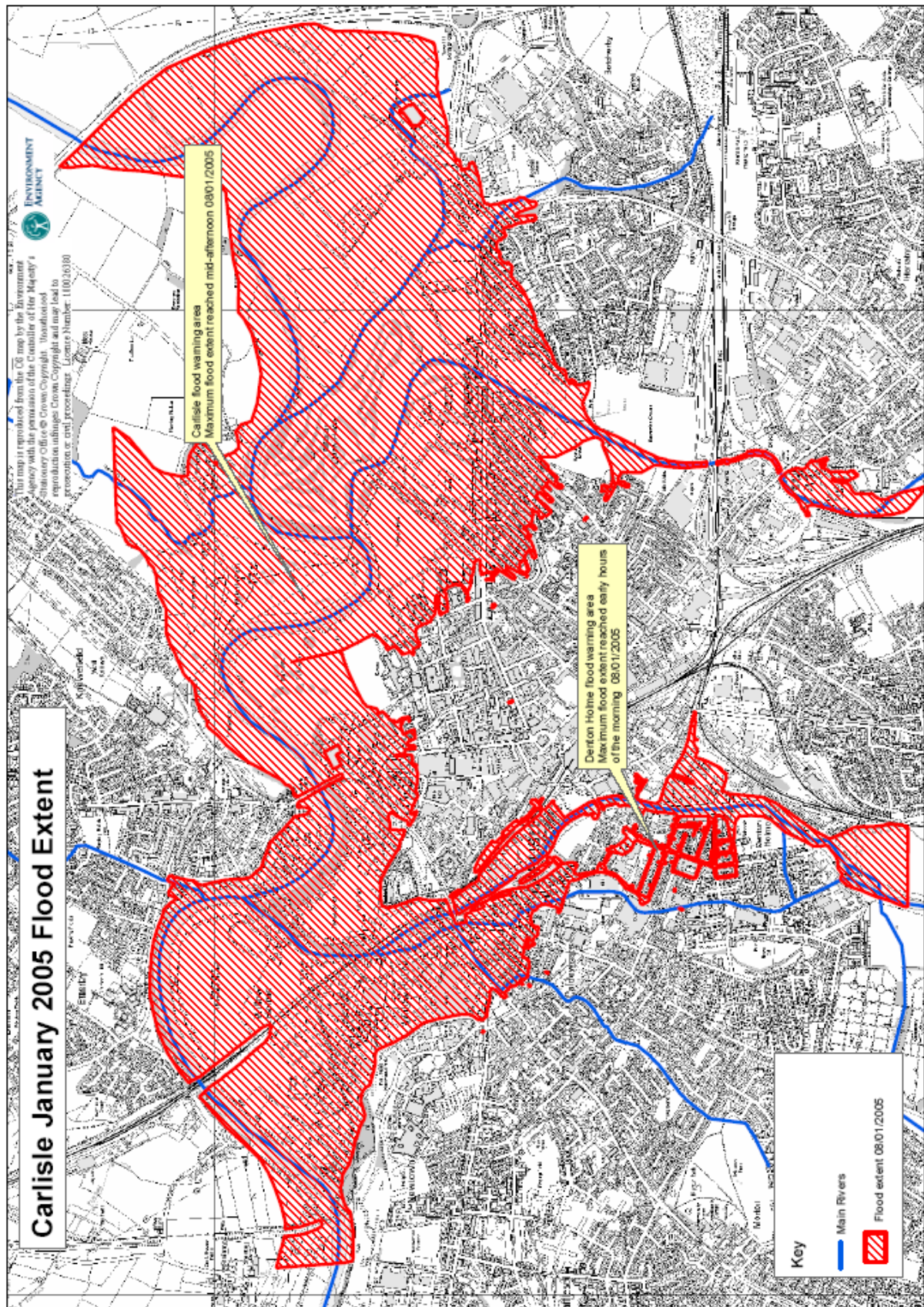


Figure 2: Extent of flooding within Carlisle City

Subsequently, from around 1100, both banks were inundated by water backing up from the River Eden.

Willowholme was affected by surface water and sewer surcharging from 2230 on 7th January. This was compounded by flooding from the Dow Beck and surface water, flowing from Caldewgate from about 0200. Flooding may also have occurred from the Little Caldew and Caldew, caused by flows backing up following obstruction of the railway bridge by trees and debris.

Again from around 1100 on 8th January, the area was inundated by flows backing up from the river Eden.

Flood warnings were issued for Cumbria, including parts of Carlisle, throughout the night. By 0502 hours, flood warnings had been issued for all flood warning areas in Carlisle.”

“At 0800 hours the Deputy Chief Constable invoked the Cumbria General Emergency Plan; Gold Command was established at Police Headquarters in Penrith and the Cumbria County Council Emergency Control Centre at Carlisle Castle was designated as Silver Command”.

“At 0830 hours, reports were received that the Civic Centre was being flooded and soon after the Magistrates Courts, Police and Fire Stations were also reported as flooding”.

“At the same time that the city's Municipal buildings were being enveloped within the flood, another area just outside the city at Warwick Bridge was also becoming critically affected, with a number of requests for rescues being received by Fire Control. Movement within and across the city was becoming more hazardous as many of the main routes became blocked. This led to some delay in providing an adequate response to those requests for assistance where in some cases the rescues were eventually achieved with the use of an Air Sea Rescue Helicopter”.

“By mid morning, the pattern of activities had been set for the next few days. These activities focused upon undertaking searches and rescues with Fire, Police, Mountain Rescue teams, the Coastguard, International Rescue Teams and members of the public. The main areas of activity by mid morning were concentrated in the Willowholme, Warwick Road and Warwick Bridge areas”.

“During the morning, the Willowholme sub-station became flooded, resulting in major power outages, not only within the city but all over the north of the county. Whilst the initial impact of this loss of power to a great extent went un-noticed by the crews operating in the open air, its effect on the infrastructure was dramatic, making homes and businesses well outside the initial flood zone uninhabitable. In particular, the loss of power to telecommunications systems soon threatened the fragile communications that were working including the police UHF network”.

The Wider Implications

The following extracts from the Cumbria County Council debrief report summarise the wider implications of the flooding.

“[On the morning of Saturday 8th January 2005], the Cumbria County Council Reception Centre Emergency Plan was activated with a Reception Centre being set up at North Cumbria Technology College. Despite appalling travelling conditions, sufficient staff and volunteers were able to reach the Centre, which operated continuously until Friday 14th January. A second Reception Centre at Wigton Road Methodist Church was activated later in the day to accommodate evacuees from the west of the City and to assist the Cumberland Infirmary. A number of other Centres were opened spontaneously and the response of so many officers, volunteers, local firms and members of the public in supporting these Centres was exceptional.

Failure of the entire electricity supply to Carlisle around midday resulted in a desperate need to source generators. The County Council Emergency Control Centre is equipped with its own standby generator, which supplied the Centre with electricity for the entire period of power outage that lasted in most of Carlisle for approximately 36 hours. It cannot be stressed enough how critical the generator was to the emergency response within Carlisle, as the Centre’s roles continued to expand to include boat deployment centre and forward operational base for support agencies such as the Army, Coastguard, etc.

Cumbria Contract Services took the lead in the sourcing and deployment of generators to Reception Centres, Care Homes and other critical locations using generators from the Emergency Services, local hire firms, Emergency Planning Unit and their own stocks. They also resourced many other items such as hot food, consumables etc.

By mid afternoon, emergency operations in Carlisle were becoming even more difficult following failure of the mobile phone networks due to power supply failure. Emergency Planning Unit emergency mobile phones that were able to receive some network signals were deployed to critical locations such as the Reception Centre. The presence of an Orange Mobile Cell within the Control Centre at the Castle, which continued to operate throughout the emergency, was of considerable benefit.

Around 1800 on Saturday 8th January, a major telephone cable fault occurred in the vicinity of the Civic Centre, resulting in failure of all landline telephones in the north of the city. This meant that there was no ‘999’ emergency service available in North Carlisle and the County Plan for telephone failure was activated. This was achieved by placing Mountain Rescue Radio Operators in vehicles located at all public call boxes. A base station was established in the County Council Control Centre to receive emergency calls that could then be passed to the emergency services.

The County Council Emergency Control Centre was operational and staffed by representatives from most of the directorates from Saturday 8th until the handover to Carlisle City Council on Thursday 13th January. During this period, the Centre also housed representatives from many of the agencies dealing with the emergency, including United Utilities. It also functioned as a temporary Police Station and Fire

Station. For approximately 1 month following handover, the Centre housed a group of officers from Carlisle City Council dealing with flood recovery.”

The Longer-Term Response

By far the greatest concentration of flooding incidence in Cumbria occurred in the Carlisle area where approximately 6,000 residents from 3,500 homes were affected by the flooding (of which approximately 1934 properties were directly flooded) and 60,000 homes were cut off from electrical supplies. The flooding in some areas reached seven feet in depth and took four days to subside.

Over the rest of the weekend and into the following week all agencies concentrated on:

- Ensuring those who had opted to remain in their homes were safe
- Assisting from their homes people who now wished to leave because of the ongoing nature of the situation
- Carrying out a full house to house search to ensure there were no further casualties
- Getting food and other necessities to trapped or isolated members of the public and to reception centres
- In the case of the Police and Fire Service, consolidating their temporary locations, acquiring kit and salvaging items from their flooded stations
- Assisting in pumping away flood water to assist other agencies bring back power supplies, clear roads, restore communications etc so that the city could get back to normal as quickly as possible
- Consolidating command and control
- Reassuring the public by house to house visits involving Police and Fire Service.

Handover of command and control from Cumbria Constabulary to Carlisle City Council took place at 0820 hours on Thursday 13th January 2005.

During the immediate aftermath of the incident, a number of Ministerial and VIP visits occurred:

- Elliot Morley, Secretary of State, Department of Environment, Food and Rural Affairs – 9th and 31st January 2005
- Prince Charles – 14th January 2005
- Hazel Blears, Minister of State, Home Office – 27th January 2005
- Patricia Hewitt, Secretary of State, Department of Trade and Industry – 2nd February 2005.

THE MULTI-AGENCY DEBRIEF – THE APPROACH

Aim

The overall aim of the debrief process was:

To identify the strengths and weaknesses of the emergency response to the 2005 Carlisle storms, and to identify actions required to enhance the response to any future incident in Cumbria.

The emergency response phase was defined to cover the time from when the emergency started on the evening of Friday 7th January 2005, until 0820 hours on Thursday 13th January 2005 when overall co-ordination was passed from Cumbria Constabulary to the Chief Executive of Carlisle City Council.

Methodology

Due to the significant number of issues arising in the emergency and the large number of organisations and agencies involved in the response, it was decided to split the debrief process into three stages.

Stage 1

In Stage 1, each organisation involved in the response was asked to carry out their own internal debrief process and produce their individual debrief report.

The following organisations submitted a debrief report:

Cumbria Constabulary
Cumbria Fire and Rescue Service
Cumbria Ambulance Service
Carlisle City Council
Cumbria County Council
Environment Agency
United Utilities
North Cumbria Primary Care Trusts
Health Protection Agency
Maritime and Coastguard Agency
MOD Search and Rescue
Government Office for the North West
Government News Network NW
Highways Agency

Some organisations chose not to submit an individual report, but instead fed their views in via the Stage 2 reports. These organisations include:

Army HQ 42 (NW) Brigade
Lake District Search and Mountain Rescue Association
Royal Naval Lifeboat Institution
International Rescue
Womens Royal Voluntary Service
Salvation Army

British Red Cross
Norman St School
Allerdale District Council
Churches Together in Cumbria
Samaritans
Carlisle Housing Association

Stage 2

A series of seven functional debrief meetings were also held to consider specific aspects of the emergency response. There were:

Alerting
Command and Control Structures – Gold and Silver Command
Search, Rescue and Evacuation
Public Warning and Public Information
Media
Reception Centres and Welfare
Communications and IT

Stage 3

A full multi-agency meeting was held on 18 March 2005 to which all responding organisations were invited.

During the meeting, the following questions were considered:

Question 1

Identify the 3 elements of the emergency response that were least effective in your opinion

Question 2

Identify the 3 elements of the emergency response that worked most effectively and efficiently in your opinion

Question 3

What would you want any other organisation to do differently in the event of another incident in Cumbria requiring a multi-agency response?

Question 4

The most significant thing I have learned is....

Question 5

One key action I intend to take following this debrief is....

The Multi-Agency Debrief Report

The information gathered in the multi-agency debrief meeting forms the basis for the remainder of this report, along with the key issues raised in the functional debrief reports.

The issues have been gathered under a series of headings, reflecting the key areas that responders identified. These are:

- Pre-alert and alert stage
- Functioning of Gold and Silver command
- Responders
- Communications and information for decision makers
- Co-ordination of resources
- Public information / media
- Business continuity
- Planning, exercises and training

Each of these key areas will be described in more detail in the Chapters that follow.

The Follow Up

The recommendations in the report will be taken forward by the Cumbria Resilience Forum. This is the multi-agency emergency planning body for Cumbria and comprises representatives from all the key responder organisations. Support in delivering the recommendations will be provided by regional and national organisations where necessary.

PRE-ALERT AND ALERT STAGE

Severe Weather and Flood Warnings

Providing the earliest possible warning of the timing and scale of severe weather and flooding is essential to enable responders to activate emergency plans and put resources on standby.

Severe weather warnings were issued to responders to provide early warning of the storms. Alongside this, the Environment Agency issued a series of Flood Watches (which alert responders to put resources on standby) and Flood Warnings during the 6th to 8th January 2005. It is not practical in the early stages of an event such as this for the scale to be predicted. Flood Watch alerts are issued most winters for flood events which do not result in impacts on this scale. Perhaps as a consequence, the significance of these warnings was not fully recognised by all responders.

The existing flood defences performed well and remained structurally sound, but ultimately, they were overwhelmed by the high water levels. Equally, flooding occurred from the surface water drainage system and culverts that could not cope with the large volumes of water. Warning systems are limited to flooding from rivers.

Therefore, even if improved warnings had been provided, it would not have been possible to stop the flooding taking place, and pre-emptive evacuation of properties may have led to a greater risk to life (e.g. people on the streets when flood waters were rising).

Warnings of further severe weather and possible flooding were received in the days following the initial event, although no further flooding occurred in Carlisle.

Recommendations

- Meteorological Office and Environment Agency to review information gathering and warning procedures to identify any possible areas for improvement to timeliness and accuracy of pre-incident warnings.
- Police to do risk assessment on receipt of any severe weather warnings and if required, consider setting up a small multi-agency group to evaluate potential consequences and assess various 'what if' scenarios (e.g. what would happen if the actual rainfall levels were twice those predicted, and how would that affect our response?).
- Environment Agency should review the existing flood protection measures and the design of the new proposed improvement scheme for Carlisle in the light of the flooding experienced.
- Local Authorities and United Utilities should review the existing drainage system in Carlisle to identify if improvements are possible.
- In line with Government strategy for flood risk management outlined in "Making Space for Water", the Environment Agency to work with partners to explore the feasibility of developing the current warning systems for rivers and coasts to urban drainage and sewers.

Declaration of a Major Incident

Some responders (particularly the non-blue light services) felt that the processes surrounding the declaration of a “major incident” and subsequent information cascade could have been improved. Organisations would have preferred to be put on standby at an earlier stage, even if they were subsequently stood down. Whilst it was recognised that the threshold for declaring a “major incident” may be different for each organisation, the important point was that this decision was cascaded to all agencies so they could assess what response their organisation needed to make.

Recommendations

- All organisations to have effective, robust, simple call-out procedures that are disseminated to all agencies and reviewed and updated on a regular basis.
- All organisations to be alerted as soon as possible once a “major incident” is declared so they can activate their plans (or as a minimum, go on standby) and alert any other agencies that may provide support.
- All organisations to proactively offer assistance if they had not been contacted for any reason.

Warning and Informing the Public

Various systems were used to warn and inform the public in advance of, and during the early stages of, the flooding. These included the use of the Environment Agency Automatic Voice Messaging (AVM) service (to over 5000 properties at risk), the Floodline dial-up telephone service, the internet, the media, and more direct means such as loudhailers and knocking on doors. The vast majority of those registered for the AVM service were sent warnings before they were affected by the flooding. However, people in flood risk areas have to opt to receive the AVM service, and despite regular offers less than 50 per cent of those who were at risk had registered to receive direct flood warnings.

Recommendations

- Environment Agency to consider how to promote wider uptake of the AVM service.
- Cumbria Resilience Forum to continue to maintain close working relationships with the media and ensure protocols for the dissemination of incident information are regularly updated.
- Cumbria Resilience Forum to consider alternative methods of disseminating information, particularly to those who are vulnerable (young, old, disabled, etc).

FUNCTIONING OF GOLD AND SILVER COMMAND

Relationships at Gold and Silver Command

Relationships between all responding organisations were very good, with full co-operation of all parties to the command and control structures that were put in place. Gold command performed very effectively in its role as a strategic decision-making body, with Silver command providing high quality tactical support. Some differences in organisational culture did become apparent (e.g. some organisations wanted to follow the emergency response plan, deviating from it only where absolutely necessary, whilst others adopted a more flexible approach to its use), but none of these differences in any way affected either the quality of the joint working or the ultimate response.

Recommendations

- All organisations to continue to maintain the close and effective working arrangements that were clearly on display during the Carlisle incident.

Membership of Gold and Silver Command

The organisations represented in Gold and Silver command were:

Gold	Silver
Cumbria Constabulary	Cumbria Constabulary
Cumbria Fire and Rescue Service	Cumbria Fire and Rescue Service
Cumbria Ambulance Service	Cumbria Ambulance Service
North Cumbria Primary Care Trusts	North Cumbria Primary Care Trusts
Health Protection Agency	Health Protection Agency
Cumbria County Council	Cumbria County Council
Carlisle City Council	Carlisle City Council
HQ 42 (NW) Brigade	HQ 42 (NW) Brigade
MOD Search and Rescue	MOD Search and Rescue
United Utilities	United Utilities
AmeyMouchel	AmeyMouchel
Government News Network NW	British Red Cross
Environment Agency	Maritime and Coastguard Agency
Government Office for the North West (Regional Resilience Team)	Office of the Deputy Prime Minister (New Dimensions Team)
Lake District Search and Mountain Rescue Association	

The majority of the representatives were well known to each other from attending meetings and exercises, and this aided working arrangements greatly, enabling fully effective multi-agency working to begin immediately on set up. It was recognised that with the advent of the Civil Contingencies Act, new responders (particularly the Category 2 responders, such as utilities) had been identified, and it was important to build the relationships with them in advance of another incident and to ensure they are familiar with the command structures within Gold and Silver. It was also recognised that some of these 'new' responders could have played a more

significant role in Carlisle if they had been involved earlier in the incident. Some organisations recognised they would have difficulty in providing full 24/7 cover in Gold command, and this was recognised, in some instances, as a barrier to developing a clear picture of what work was being progressed on the ground at any point in time. This did not, however, affect the initial stages of the emergency response where all organisations were dedicated to preserving life.

Recommendations

- All organisations to continue to maintain the close and effective working relationships built up with 'traditional' responder organisations, but also to focus on building relationships with 'new' responders and ensuring they are familiar with the command structures within Gold and Silver.
- Cumbria Resilience Forum to review possible membership of Gold and Silver to ensure all relevant parties are invited to attend
- All organisations to review their internal resilience, including business continuity plans, to check they can provide 24/7 cover if required (particularly if the incident was to progress over an extended period).

Facilities and Location of Gold and Silver Command

The loss of the Civic Centre due to flooding meant that the nearest Emergency Control Centre (located on the 1st floor of the Civic Centre) could not be activated as the County Plan required upon declaration of a major incident. Gold command was therefore established in the Police Headquarters in Penrith, with the Castle at Carlisle acting as Silver command. Both the Police HQ and the Castle performed well during the incident, providing all the facilities and accommodation required, despite the demands placed upon them. Issues were faced with the absence of a power supply to Silver, and with a temporary power cut at Gold on Sunday evening, but the back-up generators enabled normal service to continue.

Recommendations

- Police to raise awareness of the most likely locations to be used for Gold and Silver commands, recognising the dynamic decision making process required when deciding on suitable sites in the event of an incident.
- Cumbria Resilience Forum to review business continuity plans for possible Gold and Silver command locations to ensure basic facilities (e.g. power) can continue to be provided during an incident.

RESPONDERS

Understanding of Responding Organisations' Roles and Capabilities

Whilst the blue light emergency services have worked with each other for many years, there are some organisations that have only recently become involved in responding to incidents. Lack of knowledge about the role and capabilities of these new organisations may mean they are not utilised to their full extent. It may have been possible for the Military role in Carlisle to have been increased if the time limitations on their activation had been more fully understood. Equally, organisations need to be flexible in their response and consider how they can provide support in situations that may be outside their normal response thresholds or in areas that may be outside of their day-to-day remit. For example, the Maritime and Coastguard Agency contributed to the search and rescue operation, even though they would not normally work inland.

Recommendations

- Cumbria Resilience Forum to carry out an awareness raising process to improve understanding of all organisations, roles and capabilities.
- All organisations to think flexibly about how they can provide support in the event of an incident.

Capacity of Responders

The commitment and dedication of all responders involved in handling the incident was outstanding, particularly as many of them were experiencing problems with flooding and power loss in their own homes (the need for welfare support for responders was identified and arrangements put in place). Trained and experienced staff worked flexibly to deliver whatever was required of them, although more staff would have, as ever, been helpful. The introduction of 'new' responders such as the Government Office for the North West Regional Resilience Team (GONW RRT) with their role in improving communications between the local level and Government, and the Office of the Deputy Prime Minister's New Dimensions Team with their High Volume Pumps, provided a significant boost to responders existing capabilities, and soon demonstrated their added value.

Recommendations

- All organisations to ensure welfare support for responders can be activated quickly if required.
- All responders to think flexibly about the range of organisations that could provide support during an incident.

COMMUNICATIONS AND INFORMATION FOR DECISION MAKERS

Resilience of Communication Infrastructure

Communications between Gold and Silver command were not good, particularly during the early phase of the incident. This was exacerbated by the power outages and problems with mobile and landline telephones. As such, some messages did not pass from Gold to Silver (and vice versa) quickly or accurately.

Communications between emergency services on the ground were also hampered by the lack of a common radio system. This led to difficulties in Gold receiving an accurate up to the minute assessment of the situation on the ground (e.g. level of flood water, number of properties flooded, number of road closures, etc). However, activation of the Telephone Exchange Failure Plan in north Carlisle and its implementation by Lake District Search and Mountain Rescue Association, HQ 42 (NW) Brigade and MOD Search and Rescue worked well, providing a valuable '999' service for residents.

Thankfully in this instance, the communications difficulties did not lead to any adverse consequences. However, methods to improve communication channels both between responders and with the public, and contingency planning for communications failure, need to be further investigated for future incidents.

Recommendations

- Cumbria Resilience Forum to ensure communications systems between Gold, Silver and Bronze commands and any back up plans are fit for purpose.
- Cumbria Resilience Forum to review communications infrastructure between Gold and Silver commands (including telecommunications and IT links) to ensure networks are resilient and common information sharing protocols are in place. The use of alternative providers of communications infrastructure (e.g. Maritime and Coastguard Agency, Armed Forces) should be considered, along with the further development of appropriate back up plans.

Communications within Gold and Silver

As identified earlier, the working relationships between representatives within both Gold and Silver were very good. This was demonstrated by the effective and efficient communication systems that were established, both through formal meetings and informal 1-2-1 discussions. However it was acknowledged that there was scope for improvement to ensure that information was quickly and accurately shared with everyone who needed to know.

Recommendations

- Cumbria Resilience Forum to ensure communication systems within Gold and Silver commands are fit for purpose.

Information Provision

Earlier display of maps in Gold (hard copy and/or electronic, e.g. via a GIS system) would have been helpful in aiding organisations to visualise the extent and possible consequences of the flooding. The GIS system and maps available in Silver, used to inform the search and rescue operation in particular, clearly demonstrated their usefulness. The availability of information (location maps, photographs, etc) about organisations' critical infrastructure (e.g. the electricity sub-station at Willowholme) would also have been helpful in prioritising work programmes. The manner in which BBC Radio Cumbria gathered information about the current situation on the ground from reporters and members of public was recognised as an important information source that could potentially be tapped into more effectively by emergency responders.

Recommendations

- Cumbria Resilience Forum to explore options for improving information provision into Gold and Silver commands for the response to future major incidents.
- All organisations to consider how access to their key information sources can be improved.

CO-ORDINATION OF RESOURCES

Co-ordination of the Search and Rescue Operation and Reconciliation of Information with the Casualty Bureau

The search and rescue operation covered around 3,500 houses with approximately 6,000 residents and was led by Cumbria Fire and Rescue Service, with support from many other organisations and members of the public. Whilst the support of the public was greatly appreciated, the difficulties of co-ordinating their activities and ensuring their health and safety were great.

People chose whether or not to leave their homes on the night of 7th/8th and the night of 8th/9th. Thus, for a variety of reasons (including immediate self evacuation, rescue by one of the agencies, rescue by individual members of the public, being away from their homes during the incident, e.g. on holiday), some were not present in the house at some time during the flooding. The people who left went to reception centres, to relatives, to stay with friends or to stay elsewhere. Despite the fact that records of those who were rescued were kept by some agencies, and those who turned up to established reception centres were logged in, there were members of the public who were rescued for whom no records existed. These comprised those rescued by the agencies, those rescued by members of the public and those who had self evacuated. For all these reasons, the reconciliation of the queries received by the Police at the Casualty Bureau and the establishment of whether or not that person was safe proved an extremely difficult task.

Tragically, during the search and rescue operation, it was discovered that two elderly ladies had died in properties on Warwick Road. The Police appointed a Senior Investigating Officer (SIO) to ensure that a proper and thorough investigation into the circumstances was conducted. Protecting vulnerable people during floods should be seen as a community issue as well as an issue for emergency responders.

A lack of clarity was noted around who is responsible for ordering and organising transport to take evacuated people from the “beaching points” to the reception centres. This should be addressed.

Recommendations

- Police and Fire and Rescue Service should consider how records of evacuees and searched properties can be co-ordinated quickly and accurately.
- Local Authorities, Police, and the community itself need to improve methods for quickly identifying vulnerable people so that they can receive the support they need during an incident.
- Clarity required on funding responsibilities for the provision of evacuation transport.

Use of Reception Centres

Numerous reception centres were opened or put on standby by the Local Authority in line with their Reception Centre Plan. However, many more were opened on an ad hoc basis by members of the public and community groups. There was a recognition that the Reception Centre Plan needed to be reviewed to provide co-ordination across all facilities.

The manual registration systems at the reception centres worked well, although the large numbers of people involved made responding to enquiries difficult.

Recommendations

- Local Authorities should review their Reception Centre Plan to ensure overall co-ordination procedures are appropriate, that efficient checking in systems are in place and also consider how to support ad hoc reception centres set up by volunteers.
- Local Authorities to consider the computerisation of registration information to assist with dealing with enquires.

Offers of Assistance and Equipment

Many offers of assistance and equipment were received from members of the public, private and voluntary organisations, and by other responders from outside the area. These could have been co-ordinated better to maximise their input. In addition, as mentioned above, local members of the public and community and voluntary organisations also self-activated themselves to provide valuable support by opening up rest centres and assisting in the search and rescue operation. This community spirit and wish to contribute support should be recognised and built upon.

Recommendations

- Cumbria Resilience Forum should consider how to make best use of and manage local members of the public who choose to volunteer their services during an incident.
- Cumbria Resilience Forum should consider how to make best use of and manage offers of assistance and equipment from the public and other responder organisations from outside the Cumbria area (including within the North West region, and across other regions and devolved administrations as relevant). Specific attention should be given to the co-ordination of deployment of equipment and other assets, to ensure they are all tracked and can be returned to their rightful owner at the end of the incident.
- Cumbria Resilience Forum should review the training provision for larger voluntary organisations on command and control structures used during an incident to broaden their understanding and facilitate smoother working arrangements.

PUBLIC INFORMATION / MEDIA

Use of the Media

During the incident, BBC Radio Cumbria and CFM were used as one of the key methods to disseminate information to the public. They provided an excellent service to the community, turning over most of their airtime to providing vital public information. The willingness of responders, particularly the police, to put forward staff for media interviews was highlighted as a success. Recognition was made of the long term relationship and experience that had been developed between the media and responders over many years, and it was felt that this had paid dividends during the flooding.

Recommendations

- Cumbria Resilience Forum to continue building on their relationships with the media, looking for opportunities to improve working protocols and to test these using joint exercising.
- All organisations to recognise that the media have an insatiable need for information, and can provide a valuable information source to the public if they are given regular advice bulletins and interviews to broadcast.

Media Resilience

BBC Radio Cumbria managed to continue with their broadcasts despite the lack of power due to their back-up power supply. Border Television was off air for some of the time, CFM was off air for 5 hours, and it took the Evening News and Star time to print elsewhere. Overall the local media, as usual, did an excellent job but there clearly needs to be some sort of “Plan B” for dealing with power cuts.

Recommendations

- Media to review their business continuity plans to ensure they can continue to provide a service to the public during a loss of essential services such as power.
- The media should, where applicable, apply (to United Utilities) for protected status under the Electricity Supply Emergency Code, but noting that this will generally only be available to customers who are supplied at high voltage. They should consider robust standby generators for critical activities.

Getting Information to the Public

The lack of electricity meant that some people were unable to hear radio broadcast output as they did not have access to battery powered radios. Bearing in mind the Government advice for people to “Go in, Stay in, Tune in” during an emergency, more clearly needs to be done to ensure people can “Tune in” during a power cut. Other methods of disseminating information to the public were used such as the print media, the internet, telephone messaging systems, loudhailers, and door knocking. However many of these were also unusable due to the power cuts (e.g. digital cordless phones (DECT) and switch boards would not work). This is an area that could be explored further to identify additional information sources (e.g. use of on-street notice boards / billboards to provide public health information). There was a notable increase in the purchase of newspapers and the use of websites. During

the seven day period of the floods, the BBC Cumbria website had 3,247,116 “page impressions”. The Carlisle Evening News and Star website had 1.7 million hits on the week of the floods (it is normally around 200,000). Circulation of the News and Star’s flood special edition was 65,000 as people purchased multiple copies of the paper (normal daily circulation is 27,000). Also the official website www.cumbriaalert.info carried a large amount of public information.

Recommendations

- Cumbria Resilience Forum to consider further information dissemination methods that could be used, particularly in the event of a power cut.
- Cumbria Resilience Forum and the media to review the capacity of their dissemination processes to ensure they can cope with the increased volumes of ‘traffic’ generated during a major incident.
- Government and other partners to consider reviewing their promotion of the “Go in, Stay in, Tune in” message to encourage the public to think about how they would tune in during the loss of essential services such as power.

Co-ordination of Responder Organisations Press Officers

During the incident, all messages to the media were co-ordinated through the police in Gold command to ensure consistent messages were passed to the public. Co-operative working between an ad hoc group of press officers and police worked well largely due to the prevalent attitude which was to help the media in order to facilitate the public warning and information messages that had to be issued. Having more press officer resources able to dedicate their time to considering longer term ‘recovery’ issues and media monitoring would have been useful to pick up earlier on issues of concern to the public and local businesses. The need for a media liaison presence in Silver command to improve the flow of information was also noted. It was questioned whether media / press officers should actually be renamed ‘communication co-ordinators’ to more accurately reflect their role in public warning and information provision.

Recommendations

- Cumbria Resilience Forum to consider the need for better mutual aid arrangements for press officers (including those outside the affected area / organisations) to provide additional capacity for media monitoring and planning for recovery issues.
- All responders to consider locating a media liaison representative(s) in Silver as well as Gold command.
- All responders to review the role of press / media officers and ensure their role is accurately reflected in emergency plans.

BUSINESS CONTINUITY

[Note – Media resilience is covered earlier in the report]

Key Organisational Assets

The early loss of some key pieces of critical infrastructure such as buildings (police and fire station, civic centre), power (Willowholme Sub-station) and communications (landline and mobile), both hampered the handling of the incident and increased the timescale to achieving ‘business as normal’ conditions. Organisations need to ensure they have identified and understand the vulnerability of their critical infrastructure to risks such as severe weather and its consequences (flooding, power loss, etc), and put plans and/or physical improvements in place to prevent or mitigate the effects.

Recommendations

- All organisations to identify their critical infrastructure and ensure:
 - where possible, physical changes are made to improve the resilience of the assets themselves, and
 - business continuity plans are in place to allow services to continue (where possible) when assets are affected, recognising these services may need to be in a more reduced form than normal.

Organisational Staffing Plans

In Carlisle, responders performed to the best of their abilities to both deal with the incident and maintain their normal services (albeit, in some cases, at a reduced level). However, improvements can always be made, and responder organisations need to use the learning from this incident to improve their staff planning for future incidents.

Recommendations

- All organisations to review their business continuity plans with regard to staffing, to ensure key functions can continue to be delivered to the wider community during an incident.

Business Continuity of Care Homes and other Residences containing Vulnerable People

There were a number of care homes in Carlisle that suffered from a loss of power. Generators were provided by responder organisations where possible, but questions were raised as to whether care homes and other locations housing vulnerable people should have back-up power as a matter of course.

Recommendations

- Clarity required on the procedures for ensuring that vulnerable people in care homes are not put at risk as a result of power supply disruptions.

PLANNING, EXERCISES AND TRAINING

Despite adverse weather playing a major part in many emergency situations each year in Cumbria, some responders felt more training on this scenario could have been carried out. This was flagged as a particular issue to be taken forward in the future if the current concerns around climate change and its impact on the weather remain. However, it was also recognised that the previous multi-agency planning, training and exercising, and relationship building had provided a strong base for what was overall a successful response. Questions were raised as to which organisations and how many people in those organisations were involved in the training and exercising, although it was noted, that there had been poor uptake from other agencies on exercises previously organised by the Local Authorities. In addition, it was felt many exercises focused on the 'front end' of incident handling, and more needed to be done on the handover to recovery and the recovery process itself.

Recommendations

- Cumbria Resilience Forum to review their training and exercising programme to ensure that:
 - the frequency of severe weather exercises reflects past experience of the frequency of actual incidents (this should be assessed through the Community Risk Register processes required by the Civil Contingencies Act)
 - full multi-agency attendance is obtained (including from voluntary organisations), with all staff who could become involved in an incident receiving sufficient training to enable them to handle an incident confidently and effectively
 - all aspects of an incident are tested from the initial response, through to the recovery process.

CONCLUSIONS

Carlisle was only one of a number of locations in Cumbria affected by the storms and resulting flooding, although it suffered the most severe impact and received the most media coverage. The demands placed on responders in coping with these multi-site incidents should not be underestimated, and the mutual aid provided by responding organisations from outside the Cumbria area were very welcome.

Overall, the multi-agency emergency response worked well, though the tragic loss of two lives as a result of the flooding was a cause of concern for all responders.

As with the debrief process for most incidents, there have been areas for improvement identified throughout this report. These include pre-incident warnings, communications, response co-ordination, provision of information to the public, business continuity, and planning, training and exercising. However, these recommendations have not been assessed and therefore it is not known whether their implementation would have resulted in an improved response. Furthermore, many of the recommendations suggest that existing systems are enhanced, rather than there being key gaps in provision.

These recommendations will be taken forward by the Cumbria Resilience Forum in liaison with regional and national organisations as necessary. Learning from this report will also be shared with responders outside of Cumbria so others can benefit from our experiences.