

Summary: Intervention & Options

Department /Agency: Defra	Title: Impact Assessment of the Government's response to the Pitt Review: Being Rescued and Cared for in an Emergency (and Rec 6)	
Stage: Pitt Response	Version: 1	Date: 17 November 2008
Related Publications: Government Response to the recommendations from the Pitt review		

Available to view or download at:

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What is the problem under consideration? Why is government intervention necessary?

The Government's response to Sir Michael Pitt's recommendations grouped under the *Being rescued and cared for in an emergency* theme relate to:

- Flood forecasting and warning;
- Emergency response arrangements; and
- Work to improve the resilience of major and national infrastructure (including reservoirs) to natural hazards, including flooding.

Of these, the block for which an impact assessment, in advance of that which will be provided for the planned draft Floods and Water Bill, is needed is the first – flood forecasting and warning. And the key development which will address all of those recommendations is the establishment, on a pilot basis, of an Environment Agency/Met Office joint forecasting and alert service.

The rationale for Government intervention – the 12 month piloting of the joint centre – is straightforward. The Environment Agency and the Met office have worked closely for a number of years. There is an existing programme of work between the two organisations and close liaison at an operational level. But events in the summer of 2007 brought into sharp context the need for even closer working.

The emphasis in Sir Michael Pitt's report on the need for the two organisations to work closer together catalysed the formation of an Inter-Agency Working Group (IAWG) to provide options on how they might work together to deliver world-leading flood forecasting and warning services for England and Wales. The IAWG noted the following gaps in current service provision:

- There is no picture of developing flood risk from weather through to flooding to help understanding and decision making.
- Notice periods are not long enough – circa 1-5 days is required or longer if possible.
- There is no picture of multiple hazard (pluvial/fluviol/heavy rainfall event) available currently.
- There is not enough detail and accuracy in current information provided to support local decision making.
- There is no real-time information for flood affected areas and too little investment to allow fast-track development of techniques required.
- There is no national picture available for those with national responsibility.
- Not enough flood awareness or education.
- There is not good high resolution, visualisation of flood risk.
- There is no picture of inundation and how it impacts in the real world.
- There is no spatial network to support distributed flood forecasting.
- There is a lack of surface water forecasting information and warning service.
- There is a lack of personalised services

To fill the gaps in service, the IAWG recommended the following improvements:

- Development of longer lead time broad scale national forecasts and alerts
- Provision of Probabilistic Flooding Alerts and Surface Water Alerts
- Improved presentation of information and media management
- The development of options for a Joint Centre between the Met Office and the Environment Agency
- Improved communications, education and training for professional partners

What are the policy objectives and the intended effects?

The aim of the joint centre is to improve the UK's ability to respond to flooding events by providing a national forecasting and alert service to Category 1/Category 2 responders and over time and with improved capabilities to the public.

Its objectives are:

- To operate a programme that will accelerate our capabilities to deliver operational services.
- The provision of operational services to category 1 and 2 responders, professional partners and over time and with improved capabilities to the public.
- Training in the use and interpretation of the Joint Centre products and services to professional partners and organisational staff.
- A suite of products which are delivered faster and more cost effectively.
- National guidance and information for all flooding triggered by flood related weather events which enables earlier mitigation action to take place
- A joint authority for defining real-time flood forecasting (and alerting) related science needs and their development, with implementation for national scale forecasting.

The intended effects (i.e. the outcomes sought) are that it:

- Enables emergency responders, professional partners and overtime, the public to better understand, manage and respond to flood risk and potentially to wider natural hazards.
- Provides longer lead times for emergency responders and professional partners which enables earlier mitigation actions
- Provides consistent all-flood products and communications which result in improved awareness preparedness and response
- Becomes a UK wide service which complements local civil contingency action.
- Reduces damage to property, personal injury and loss of life.

What policy options have been considered? Please justify any preferred option.

Options for closer working, but no joint centre

The main alternative to a joint centre is closer, but still independent, working by the Environment Agency and Met Office. The case made by Sir Michael Pitt for a joint centre (see evidence base section below) was compelling, however, so this option was not pursued beyond the initial stage of preparing the Government's immediate response to Sir Michael's report in June 2008.

Options on scope of operational Services

The scope of the joint centre's work was carefully considered by the Met Office and Environment Agency. That consideration led to the conclusion that, in order to address all of the requirements identified by Sir Michael Pitt, it should include the full range of operational services, as follows:

- Meteorological guidance products
- National Flooding Outlook Statements currently provided by the Environment Agency
- National Flood Warning Duty Officer functions
- Extreme Rainfall Alert (ERA) service
- Heavy Rainfall Warnings for the Environment Agency
- Storm Tide Forecasting Service Outputs

The joint centre will also lead important work on

- Developing alerts for flood response
- Consultancy services

Location Options

The identification of location is extremely important in order to enable technical services as quickly as possible and to attract the resources required to manage and deliver the service.

London was the chosen option. Two options were initially considered:

- a. Co-location with the Met Office in Exeter, the benefits of which are:
 - Lower cost option
 - Builds directly on the service capabilities already established in the Met office in Exeter and allows the quickest physical establishment of the centre.
 - Accommodation and technical services mostly in place
 - Proven resilient capability, with tested backup plans.
 - Co-location with other operational staff allows a team approach to dealing with severe weather.
 - Exeter operations can expand to accommodate a larger centre.
- b. Co-location with the Met Office London team, the benefits of which are:
 - Strong public sector stakeholder ties, particularly during incidents
 - Greater opportunities to develop media relationships and improve communication channels
 - Attractive to key Environment Agency staff
 - Available space in the Met Office location at Clerkenwell Road.
 - Opportunities to enhance use of RIMNET (Radioactive Incident Monitoring Network) facility
 - Strong resilience capability due to RIMNET presence.
 - Part of the Government Secure Internet network.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

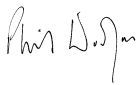
The Government's progress on delivering the commitments included in its response to Sir Michael Pitt's recommendations will be overseen by a new MISC Cabinet Committee. Review of the specific actions related to individual recommendations will be carried out at different times.

More specifically, the Joint Centre will initially be run as a 12 month pilot. The executive management teams of both organisations will be presented with an Outcome Report and associated business case to inform the decision for a continued service at the end of the pilot period.

Ministerial Sign-off For Consultation Stage Impact Assessment:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: Phil Woolas, Minister for the Environment



Date: 24 July 2008

Summary: Analysis & Evidence

Policy Option: Free home flood surveys

Description: Free flood risk assessments offered to clusters of households identified as suitable for property-level mitigation

COSTS	ANNUAL COSTS	Description and scale of key monetised costs by 'main affected groups' The piloting of the Joint Centre will provide the evidence to inform a future Impact Assessment, should the option of it continuing beyond the 12 month period be pursued. Nevertheless, we have carried out some initial analysis to highlight the business case for such a Joint Centre. Average annual cost to March 2011, including one-off costs is £3.294m. This includes set-up costs which would diminish after the first 16 months of operation (assuming the Joint Centre continues to operate beyond the 12 month pilot). More specifically, setup and running costs for those first 16 months would amount to around £3.6m (an annual equivalent of £2.7m), after which they could be expected to fall to around £1.2m a year, remaining fairly constant thereafter	
	One-off (Transition)		
	£ 0		
	Average Annual Cost (excluding one-off)		
	£	Total Cost (PV)	£
Other key non-monetised costs by 'main affected groups'			

Description and scale of key monetised benefits by 'main affected groups'

Key non-monetised benefits by 'main affected groups' will be from the medium and longer term investment in new capabilities in flood forecasting and alerts, typically:

- Longer notification periods and lead times
- Better access to information for the public, as well as emergency planers and responders
- Greater accuracy
- Greater likelihood of faster actions following warnings - by the public and by emergency responders – leading to reductions in damage
- Visualisation
- Communications

These capabilities have a direct impact on the reduction of damages during a flood event. At present, damage reduction calculation methodology is not well defined and is difficult to apply.

There are a number of intangible benefits:

- Longer notification periods and lead times
- Efficiencies for emergency responders from linking into a single authoritative source for all National Flood Forecasting Information.
- A fully staffed National Flood Warning Duty Officer role linked directly into Met office information, on site and readily supported by addition staff during an event.
- Better communication and faster decision making between Met Office and Environment Agency staff.
- Better education of the users of the services and hence improved use of the outputs.
- Reduction in the time taken to process rainfall data and assess its impact on flooding
- Reduction in delay for delivery of the Met Office rainfall actual/forecasts
- Reduction in time taken for a forecasting model to run and the time interval between each run
- Improved lead times provided by the forecasting models
- Reduced time taken to run additional 'what if' scenarios, interpret the results and communicate.
- Reduction in the time taken for flood warning staff to interpret forecasts and decide whether to issue a warning
- Reduction in time taken for national warnings and/or alerts to be issued

ANNUAL BENEFITS

One-off

£ 0

Average Annual Benefit

£

Total Benefit (PV)

£ 124 million (20 years)

Other key non-monetised benefits by 'main affected groups'

Key Assumptions/Sensitivities/Risks

Two main risks related to implementation of a Joint Centre are listed below:

- If the pilot does not develop into a long term service it may be difficult to reinstate the services as currently provided. **Mitigation:** care must be taken to ensure that any service developed or migrated is capable of operating independently from the joint team if required.
- Customer expectations are too high or are not met. **Mitigation:** Ensure early and constant engagement with main users/customers.

Price Base Year	Time Period Years	Net Benefit Range (NPV) £	NET BENEFIT (NPV Best estimate) £			
What is the geographic coverage of the policy/option?		England and Wales				
On what date will the policy be implemented?		From 1 December				
Which organisation(s) will enforce the policy?		None – not regulatory				
What is the total annual cost of enforcement for these organisations?		£ n/a				
Does enforcement comply with Hampton principles?		Yes				
Will implementation go beyond minimum EU requirements?		No				
Will the proposal have a significant impact on competition?		No				
Annual cost (£-£) per organisation (excluding one-off)		Micro Yes / No	Small Yes / No	Medium N/A	Large N/A	
Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)				
Increase of	£ 0	Decrease of	£ 0	Net Impact	£ 0	

EVIDENCE BASE

1. Sir Michael Pitt's report on the summer 2007 floods made a strong case for the establishment of a joint centre for flood forecasting and alert. It stated:

"The summer 2007 floods exposed gaps in our capabilities in relation to forecasting and flood warnings"

"The Environment Agency and the Met Office should take this opportunity to significantly enhance the UK's flood forecasting abilities and show a willingness to be open to a number of options including a joint centre."

"The Review believes that there should be co-location of appropriate expert staff at a national level from the Environment Agency and the Met Office to integrate the process of weather forecasting and flood modelling and warning."

"The evidence we have received from international examples ... and from submissions to the Review suggest that this approach would maximise the potential enhancements that can be made in the quickest time."

2. A detailed business case was developed by the Met Office and Environment Agency, which led to the proposition to establish a joint forecasting and alert service based in London. On the basis of that, the Government has strong evidence that the Joint Centre will;

- provide a single, 100% consistent, national flood warning service
- house a joint programme integrating both meteorological and hydrological research outputs with a view to developing improved and additional services

More specifically, the centre will bring two Government agencies together under one roof for the first time, to provide the most complete picture of developing flood risk from weather to the actual flood event itself. From April 2009, it will;

- Provide 24/7 operational capability and make use of world-leading supercomputer technology and improved flood forecast visualisation techniques
- House meteorologists with specialist expertise in rainfall prediction and hydrologists with expertise in water flow. The combined team will have detailed understanding of the needs of the resilience community and operators of Critical National Infrastructure (CNI).
- Provide a range of probabilistic flood warnings with significantly extended lead time to category 1 and category 2 emergency responders and CNI operators.
- Issue National Flooding Outlook Statements and manage the Environment Agency's National Flood Warning Duty System from 1 December 2008.
- Manage the Extreme Rainfall Alert service, which is currently being piloted at the Met Office in partnership with the Environment Agency.
- Provide storm tide forecasting to warn of coastal surges
- Develop and manage web portals - one secure and one open - providing appropriately visualised meteorological and flooding data.
- From 2010 it will additionally provide:
 - Visualisation of developing flood extents
 - Lead times of 5-10 days for rainfall forecast and consequent flood risk
 - Explore wider environmental risk warnings, such as drought and air quality

The Joint Centre will initially be run as a 12 month pilot. The executive management teams of both organisations will be presented with an Outcome Report and associated business case to inform the decision for a continued service at the end of the pilot period.

Specifically we envisage the following benefits:

- Enables emergency responders, professional partners and over time, to the public in order to better understand, manage and respond to flood risk and potentially to wider natural hazards
- Provides longer lead times for emergency responders and professional partners which enables earlier mitigation actions
- Provides consistent all-flood products and communications which result in improved awareness preparedness and response
- Becomes a UK wide service which complements local civil contingency action
- Reduces damage to property, personal injury and loss of life.