



# **Internal Debrief Report for Flooding in June and July 2012**

**Produced by the Resources Directorate**

**PROTECT : Internal Only**



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## Introduction

The purpose of this debrief is to review the circumstances in leading up to, responding to, and the initial recovery from the flooding incidents during June and July 2012 in order to identify good practice and lessons which can be learnt from in order to improve similar emergency responses in the future.

As with any emergency response there are aspects which could have been better and this reports main intention is to ensure these areas are identified clearly with actions documented to assist the Council in avoiding similar issues in the future.

However, the Council's overall response, and that of its partner responder agencies, was largely effective and provided leadership within the community to protect life and property, safeguard the environment, and provide emergency restorative services to investigate, maintain, and repair damaged infrastructure such as culverts, highways, bridges and pathways.

Given the lack of forewarning of the actual rainfall experienced during the initial stages of the incident, and the fact that the majority of the response fell outside of normal working patterns, the Council should be commended for its speedy and co-ordinated response in the emergency and recovery stages. This is especially relevant to those staff who gave over and above any normal expectations of them.

It is fitting therefore, that this report reflects the exceptional response undertaken by the Council but also that advantage is taken of feedback from those involved in the response and recovery to assist in any future flooding incidents.

## Summary of Recommendations & Actions

The list below is a summary of all actions identified throughout the report. The ID number of each action relates to the order they appear in the report but have been group here in relation to the area of work they relate to.

ID	Action Description	Assigned To	Deadline
<b>Business Continuity</b>			
1.	Departments to undertake a flood impact assessment of their own facilities, staff, services and resources to determine the risks of flooding on them and take action as appropriate to mitigate disruption and ensure resilience. Business Impact Analysis to identify where risk from flooding is present and business continuity plans to be updated accordingly with preventative and contingency measures.	All Directors	30/09/12
2.	To oversee and co-ordinate the review of business continuity for flood response and resilience, as per point 1 above, across all departments.	Risk, Business Continuity & Governance Group	30/09/12
3.	The Council's Employment Agency are able to supply standby staff, for both in and out of hours work, once the staffing requirement is identified and agreement with agency workers agreed. The Environment, Housing & Neighbourhoods Department should engage the Employment Agency to identify and supply contact details of agency workers who could provide cover for essential work roles, especially during emergencies.	Sayyed Osman  (with Lorraine Nicholls from the Employment Agency)	30/10/12
<b>Emergency Plan Reviews</b>			
4.	A detailed debrief of the humanitarian aspects of the response and recovery stages to be undertaken to include rest centres, support to vulnerable people, volunteers, staff welfare and access to food clothing and equipment.	Steve Tingle	14/09/12
5.	A greater sensitivity is needed to ensure that the Multi-Agency Flood Plan – Part 2 (Blackburn with Darwen Borough Council) is activated when the risk of flooding increases, even if this is a staged activation which can escalate as forecasts escalate, rainfall increases, or flooding becomes apparent. This would allow greater preparedness, especially in times where forecasts are uncertain, and ensure Council resources are available when needed.	George Bell	31/10/12
6.	The sensitivity to flood and severe weather alerts should be heightened during large events, especially those with a national/international audience or where the risk factors involved or unusual or assessed as high.	Events Safety Advisory Group, George Bell & Civil Contingencies	31/10/12
7.	Early communication of flooding occurrences from the Drainage Team to the Civil Contingencies Team should occur even before activation of the Multi-Agency Flood Plan (Part 2) to ensure that a fuller assessment of the circumstances being faced is achieved at the corporate level and to ensure decision making is based on all relevant information and therefore appropriate action taken.	George Bell	14/09/12



8.	The decision to activate the Emergency Control Centre needs to be taken at an earlier stage with consideration given to lowering the threshold of when activation might occur. The decision to open, continue or close an Emergency Control Centre should be revisited on a planned schedule with the suggestion of this being twice daily.	Sarah Riley & Tactical Officers	30/09/12
9.	Clarity of individual team roles and responsibilities needs to be reviewed and documented within the flood plan. This should specifically clarify contact arrangements within individual teams for liaison and information sharing which significantly reduces the direct communication with front line staff by those not within their direct management structure.	George Bell	31/10/12
10.	A specific role to establish working shifts and rotas during emergency responses should be given to an officer not engaged in off-site or other extensive response works within each departmental business continuity plan to ensure staff are provided with necessary down-time away from the response. Such an officer should also ensure hot debriefs for staff coming off a shift are also undertaken. This general arrangement also to be captured corporately in the Humanitarian Assistance Functional Plan.	All Directors  Steve Tingle (Humanitarian Assistance Update)	31/10/12  30/09/12
11.	The Council's Duty Team should review and amend all of its operating procedures, roles, responsibilities and resources to take account of its emergency response and recovery function and ensure these are documented into a completed emergency plan which must be authorised through the Civil Contingencies Team and Strategic Risk & Resilience Forum.	Simon Littler	30/11/12
12.	The Site Clearance Functional Plan should be completed to reflect the works required for clearing affected areas following a flood.	Steven Oldham / Sayyed Osman	31/12/12
13.	Clearly defined procedures to be written to cover the process of purchasing, collecting and transporting goods for use in humanitarian assistance in collaboration with the Logistics Functional Co-ordinator.	Steven Tingle / Paul Westbrook	30/09/12
14.	The Council should reconsider and confirm its sandbag policy which clearly sets out responsibilities, establishes when sandbags will or will not be provided to the public, provides arrangements for the disposal of sandbags to ensure the protection of public health, and ensures that these issues are communicated clearly to the public. Property owners should also be advised on their own responsibilities to protect their property from flooding in the future. Policy to be presented to Councillor Faryad Hussain's Senior Policy Team (SPT).	Sayyed Osman / Tim Birch / Heather Taylor / Marc Schmid	31/10/12
<b>Multi-Agency Co-ordination</b>			
15.	The issue of initial police contact through the Force Incident Manager to be reconsidered during periods of widespread emergency response where contact becomes impossible due to workload pressures.	Lancashire Constabulary (via Civil Contingencies Team)	13/09/12

16.	Contact arrangements with the Care Trust / Primary Care Trust to be clarified and clearly documented in the Humanitarian Assistance Functional Plan and Emergency Contacts Directory.	Steve Tingle (Humanitarian Assistance)  Sarah Riley (Emergency Contact Directory)	14/09/12
<b>Communication</b>			
17.	A text messaging system should be considered to facilitate the contact and calling out of staff.	Stephen Mullineaux & Sarah Riley	31/09/12
18.	The publication of key contacts on the intranet for individual officers responsible for co-ordinating specific aspects of the emergency response at different times should be undertaken. A specific page should be pre-prepared for such use in all emergencies to facilitate better communications.	Sarah Riley & Lee Jorgensen	31/11/12
19.	Early establishment of a public helpline to be included in arrangements within the Multi-Agency Flood Plan (Part 2).	George Bell / Ross McQueen	30/10/12
20.	Arrangements for the public helpline to be updated within the Communications & Engagement Functional Plan to always use the designated emergency helpline number rather than existing numbers. In addition, recorded messages must be managed effectively and frequently to ensure that correct messages are being provided to the public.	Marc Schmid / Ross McQueen	30/09/12
21.	A single point of contact and helpline for sole use by Members should be established to provide regular updates during emergencies and to co-ordinate work identified by members with Council departments and teams. Additional training via the Emergency Planning College is also available for elected members.	Phil Llewellyn & Sarah Riley	30/12/12
22.	Media protocol for Council officers and Members to be developed to ensure standard procedures are followed to assist in avoiding common problems when dealing with the media and to ensure public messages from the Council, and its partner agencies, are consistent and co-ordinated.	Marc Schmid	30/09/12
23.	Formalisation of the 'business buddies' and/or commercial liaison role by the Regeneration Department should be formalised within the Communications & Engagement Functional Plan.	Brian Bailey / Matthew Sidgreaves / Marc Schmid	30/09/12
24.	Consideration as to how calls from businesses will be handled when received through the Contact Centre and/or Public Helpline. This to be reflected in the Communications & Engagement Functional Plan.	Matthew Sidgreaves / Ross McQueen / Marc Schmid	30/09/12
<b>Tactical Officers</b>			
25.	A primary and secondary Tactical Officer is required on a rota basis to assist in multi-incident events or provide shift relief where an emergency occurs. To support this additional Directors & Head of Service should participate on the rota.	Sarah Riley	30/09/12

26.	A specific event Tactical Officer should be assigned by the Events Safety Advisory Group for all high risk events. This Tactical Officer to be involved in planning for the event as well as the manning of any Event Management or Multi-Agency Co-ordination Group for the event itself. The normal rota Tactical Officer would retain responsibility for dealing with other emergencies as they arise and co-ordinate fully with the Event Tactical Officer.	Events Safety Advisory Group	30/09/12
<b>Training, Engagement &amp; Resources</b>			
27.	Consideration should be given to staff attendance at training for emergency response which reviews and confirms staff roles during an emergency, balanced with the need to maintain normal day-to-day activities.	All Directors	31/12/12
28.	The Council's Duty Team should be provided with all weather phones, with additional batteries that can be charged separately to the phone using both the mains power supply and in-car 12v systems.	Simon Littler & Sarah Riley	30/09/12
29.	The Council's Duty Team members should undertake training in the driving and use of the Council's 4x4 vehicles to enable better and safer access to incident scenes where required.	Simon Littler & Paul Westbrook	30/11/12
30.	Continue to ensure arrangements for having sufficient Environment staff available to respond to emergencies of various types out-of-hours, including the application of the Corporate Standby & Call-Out Policy.	Sayyed Osman / David Fairclough	30/09/12
31.	The Environment, Housing & Neighbourhoods Department should work with staff likely to respond to the scene of flooding (including clean-up operations) to ensure they have the necessary Personal Protective Equipment, have been immunised appropriately (if necessary), and have received training in both health and safety and specific issues around working in or around flooded areas.	Sayyed Osman / Mette Soendergaard	31/10/12
32.	The Council should review dependencies on, and the effectiveness of, existing mutual aid agreements with neighbouring local authorities especially those within the same regional footprint which can be affected by the same weather conditions. Mutual aid agreements with local authorities further away should be considered.	Sarah Riley	31/12/12
33.	Storage and access to humanitarian assistance stocks, currently at Davyfield Road Depot, to be revisited and revised if required to ensure ease of access during emergency responses.	Steven Tingle / Paul Westbrook	30/09/12
34.	Training to be provided to the Council's Duty Team Officers on humanitarian assistance, especially in relation to rest centres, vulnerable people and provision for pets during evacuations.	Steven Tingle	30/09/12

## Recovery & Longer Term Issues

35.	Recovery Co-ordination Group to be formed following all incidents which have a significant impact on one or more of the borough's infrastructure, community/human welfare, businesses/economy or the environment. Significant being defined as requiring the Council to deploy more than normal day-to-day resource to respond to or recover from an incident.	Tom Stannard / Jonathan Tew	30/09/12
36.	The Council should assess the impact of potential budget pressures from flood recovery, response and its future priorities for infrastructure repairs and improvements both internally and with the Environment Agency.	Sayyed Osman / Brian Bailey	30/09/12
37.	The Council should reconsider the frequency of its gully cleaning services especially around known flood risk areas to preserve the capacity of existing infrastructure to move water and assist in preventing flooding.	Sayyed Osman	30/09/12
38.	A Community Resilience Programme related to this flooding incident to be established and maintained.	Tim Birch / Heather Taylor / Marc Schmid	14/09/12
39.	Completion of the planned arrangements for Community Resilience prior to, during, and following an emergency should be achieved as part of the Communications & Engagement Functional Plan.	Marc Schmid	30/09/12



## Overview

On the evening of Friday 22<sup>nd</sup> June flooding occurred in areas across the borough, mainly in the Darwen area where the A666 highway and adjacent properties were severely affected. This was caused by a significant rainfall event, for which there was considerable uncertainty in weather forecasts leading up to the incident. This resulted in the rise of rivers combined with surface water run-off and accumulation which was worsened due to the land being already saturated from rainfall during proceeding weeks.

Darwen is identified as a Rapid Response Catchment by the Environment Agency and is therefore susceptible to rapidly rising flood waters from both surface water run off and river sources. In addition, flood waters also recede extremely quickly. Such fast flowing waters are able to cause substantial damaged to infrastructure and property but are short lived leaving behind damage and devastation in their path.



It is estimated that 120mm of rainfall was experienced over a number of hours on the afternoon/evening of Friday 22<sup>nd</sup> June. This exceeded the capacity of existing infrastructure to move water away and therefore resulted in flooding. However, improvements in flood defences in the Darwen area did appear to reduce the area that would previously have flooded and therefore protected a number of commercial and residential properties.



Other areas of concern included the structural affects on a number of road bridges, individual pockets of unexpected surface water flooding, damage to parks, silting of ponds/lakes, impacts on Council premises, road closures, damage to culverts and flood defences, and the support of the public – especially those most vulnerable.

This flooding incident was then preceded by a roller-coaster of drier weather interrupted by periods of severe rainfall, resulting in two further

flooding incidents. The first of these occurred on the evening of Thursday 28<sup>th</sup> June which mainly resulted in the re-flooding on those areas affected the previous weekend, albeit to a lesser degree. The second incident on Friday 6<sup>th</sup> July resulted, it is surmised, because of the damage caused to gullies, culverts and other flood defences from the previous flooding. Due to heavy rainfall this culminated in a substantial volume of water collecting unexpectedly around Knott Street in Darwen, causing further



substantial damage to the highway and culvert infrastructure, and undermining the structural integrity of a privately owned property on Railway Road. Due to this a number of precautionary evacuations were advised, including a Council operated Youth Centre, traffic was severely disrupted for several days, and relatively minor flooding affected Darwen Library Theatre.

It should be stated that in general the overall response of the Council, with its multi-agency partners, was largely effective and organised.

It is the intention of this debrief, however, to ensure that we identify both good and bad aspects of the Council's response to ensure that any lessons identified are learnt from and continuous improvements are made to existing emergency plans.





## **Debriefs & Scope**

### **Incident Review under the Flood & Water Management Act 2010 (Section 19)**

Under the Flood & Water Management Act 2010 Blackburn with Darwen Borough Council, as a lead flood authority, is responsible for undertaking a flood incident review where a number of properties have flooded. Such reviews focus on the preventative aspects of flooding and infrastructure issues. This report will focus on the emergency response and initial recovery operations, however, there is likely to be some crossover and where appropriate issues will be included.

### **Emergency Response & Recovery Review**

The Civil Contingencies Act 2004 requires Blackburn with Darwen Borough Council to prepare plans for the response to emergency incidents. One aspect of ensuring plans are effective is to review arrangements periodically and especially following a response to an incident. This report will focus primarily on these aspects to ensure lessons are identified and recommendations formed which can be fed back into the emergency planning process to update plans. However, a more detailed debrief of the humanitarian assistance issues will be undertaken separately.

### **Business Continuity Impact Review**

The Civil Contingencies Act 2004 requires Blackburn with Darwen Borough Council to prepare plans for the continuation of services and for increasing resilience within its own internal infrastructure. It is apparent that a number of services were adversely affected by the severe rainfall, the flooding, or the response to this. Some examples include the roofs of some Council premises leaking resulting in water damage, the lack of available staff to respond to the flooding, the need to evacuate and relocate services, and the ability for services to be maintained over a protracted and out-of-hours response. Where appropriate to the emergency response these will be identified in this report, however, it is recommended that all individual departments review and debrief the impacts from this incident to ensure services are protected and resilient in the future, and that this is overseen by the Risk, Business Continuity and Governance Group to ensure necessary action is completed.

#### **Actions Summary in this Section**

1. Departments to undertake a flood impact assessment of their own facilities, staff, services and resources to determine the risks of flooding on them and take action as appropriate to mitigate disruption and ensure resilience. Business Impact Analysis to identify where risk from flooding is present and Business Continuity Plans to be updated accordingly with contingency measures.
2. Risk, Business Continuity & Governance Group to oversee and co-ordinate the review of business continuity for flood response and resilience, as per point 1 above, across all departments.
4. A detailed debrief of the humanitarian aspects of the response and recovery stages to be undertaken to include rest centres, support to vulnerable people, volunteers, staff welfare and access to food clothing and equipment.

## Summary of Proceeding Days and Weather and Flood Forecasts

On the lead up to the evening of Friday 22<sup>nd</sup> June a number of Weather and Flood Alerts were received by the Council indicating likely heavy rainfall with medium and low risk of river and surface water flooding. However, at no point did the risk increase to High which would have triggered a full flood response prior to the flooding occurring.

- ☁ Prolonged period of rainfall over the weekend prior to the flood incident, with Monday to Wednesday forecast as substantially dryer, then deteriorating into wetter weather by Friday.
- ☁ Ground saturated and some minor standing surface water on highways.
- ☁ On the morning of Friday 22 June, more specific heavy rainfall warning issued predicting rainfall totals over a 27-hour period of up to 120mm in Lancashire.
- ☁ Forecasts during the late morning and afternoon of Thursday 21<sup>st</sup> June indicated that the major downpours would move to affect mostly Cumbria and northern parts of Lancashire. A medium risk of flooding was maintained on Friday 22<sup>nd</sup> June.
- ☁ Teleconferences were hosted by the Environment Agency on the Thursday & Friday attended by Imran Munshi and Roger Lever in the Drainage Section respectively. Forecasts and flood messages were confirmed at this point and, on Friday, Roger Lever advised the Environment Agency of a couple of blocked culverts. Indications from these teleconferences did not provide an imminent warning of severe flooding but maintained a medium risk.
- ☁ At no point proceeding the flooding did forecasts indicate a high risk of flooding and trigger points for the activation of the Multi-Agency Flood Plan were not met.
- ☁ ***A detailed timeline of forecasts, alerts and warnings can be found in Appendix B to provide context for this debrief report.***

### Actions Summary in this Section

5. A greater sensitivity is needed to ensure that the Multi-Agency Flood Plan – Part 2 (Blackburn with Darwen Borough Council) is activated when the risk of flooding increases, even if this is a staged activation which can escalate as forecasts escalate, rainfall increases, or flooding becomes apparent. This would allow greater preparedness, especially in times where forecasts are uncertain, and ensure Council resources are available when needed.

## Notifications

- ☎ The Civil Contingencies Duty Officer received an initial contact from Lancashire County Council Emergency Planning Duty Officer that flooding was occurring in parts of Lancashire.
- ☎ The Civil Contingencies Duty Officer contacted the Police Eastern Division Duty Inspector to ensure liaison and co-ordination. Normally, initial police contact would be via the Force Incident Manager, however, this service was not contactable due to the extent of the flooding response required across Lancashire.
- ☎ Subsequently contact between Civil Contingencies and the Council's Out-of-Hours Team who advised that the Out-of-Hours Team Leader was on-site co-ordinating response with agencies and that a rest centre had been opened at Darwen Leisure Centre.
- ☎ The Civil Contingencies Duty Officer made contact with the Tactical Officer to escalate the incident.
- ☎ Tactical Officer & Head of Civil Contingencies liaised and agreed activation of an emergency co-ordination cell to operate from the Town Hall. This to be manned by all three members of the Civil Contingencies Duty Team.
- ☎ Initial contact with the Care Trust / Primary Care Trust out-of-hours duty Director failed due to the wrong person being asked for by the Civil Contingencies Team.
- ☎ Difficulties were experienced by a number of departments in contacting and calling out staff to assist with the response. Firstly because of the time and resource needed to call staff, secondly because the contact details for some staff were not available, and thirdly because staff were unable or unwilling to come to work out-of-hours.

### Actions Summary in this Section

15. The issue of initial police contact through the Force Incident Manager to be reconsidered during periods of widespread emergency response where contact becomes impossible due to workload pressures.
16. Contact arrangements with the Care Trust / Primary Care Trust to be clarified and clearly documented in the Humanitarian Assistance Functional Plan and Emergency Contacts Directory.
17. A text messaging system should be considered to facilitate the contact and calling out of staff.

## Response

### Multi Incident / Event Implications

It should be noted that preparations for the Torch Relay to arrive in the borough on Saturday 23<sup>rd</sup> June were in place, including the duty Tactical Officer being in attendance at Police HQ, Hutton. Additionally, Police intelligence had also indicated the potential for an impromptu EDL demonstration to take place in Blackburn on that same Saturday.



The duty Tactical Officer was able to deal with flooding on Friday night until late, however, this added considerable strain for the following early morning start to attend the multi-agency co-ordination centre for the Torch Relay. An additional Tactical Officer was engaged to provide some relief, mainly during Saturday, as other Tactical Officers were not contactable or were unavailable on the Friday night. The existing Tactical Officer was then needed to cover the rest of the duty shift until Monday morning, whilst retaining some support to co-ordinate community impact assessments and recovery works by the additional Tactical Officer.



There is some concern that the torch relay affected the level of weather and flood forecasting provided in the lead up to the flood events; these lacking the severity which actually occurred, although it is recognised that the weather system itself was highly unpredictable.

#### Actions Summary in this Section

25. A primary and secondary Tactical Officer is required on a rota basis to assist in multi-incident events or provide shift relief where an emergency occurs. To support this additional Directors & Head of Service should participate on the rota.
26. A specific event Tactical Officer should be assigned by the Events Safety Advisory Group for all high risk events. This Tactical Officer to be involved in planning for the event as well as the manning of any Event Management or Multi-Agency Co-ordination Group for the event itself. The normal rota Tactical Officer would retain responsibility for dealing with other emergencies as they arise and co-ordinate fully with the Event Tactical Officer.
6. The sensitivity to flood and severe weather alerts should be heightened during large events, especially those with a national/international audience or where the risk factors involved or unusual or assessed as high.

## **Communications, Information & Co-ordination**

### Early Alert to Flooding Occurrences

During Friday 22<sup>nd</sup> June the Environment, Housing and Neighbourhoods dealt with a number of flooding incidents, however, this was not communicated to the Civil Contingencies Team who remained unaware that any flooding had occurred. From the Civil Contingencies Team perspective this lack of notification



coupled with Met Office advice that the weather would move to affect mainly Cumbria and areas of northern Lancashire and only a medium level of flood risk advised by the Environment Agency, gave the incorrect picture that rainfall would not be significant or protracted over Blackburn with Darwen and was unlikely to result in extensive flooding.

### Emergency Control Centre

The decision not to open an Emergency Control Centre by the Tactical Officer and Head of Civil Contingencies reflects the seriousness of requesting a large number of staff to travel during extremely hazardous conditions, the potential for staff to become stranded due to flooded roads, the fact that staff may be dealing with flooding of their own properties, and the likely length of time it would take staff to attend at the Town Hall whilst ensuring that the Council also had resources to respond the flooding incident. Therefore, as all three members of the Civil Contingencies Duty Team were already in contact and in relative close proximity to the Town Hall a three person Emergency Response Cell was formed to assist in co-ordinating the Council's emergency response. Other required staff were contacted at home to co-ordinate various aspects of the response as and when required.

If circumstances had been different the Emergency Control Centre would have been activated. The Emergency Control Centre should possibly have been activated the following day, however, severe weather conditions were not forecast and this decision was not made as there was no call for such a level of co-ordination. When forecasts did indicate severe weather again during 27<sup>th</sup> & 28<sup>th</sup> June the decision was not revisited as the conditions were not expected to be significant but were only reported as posing a low risk by the Met Office and Environment Agency. On the 5<sup>th</sup> July 2012 forecasts worsened to a medium risk of flooding and an internal Flood Co-ordination Group met to discuss arrangements where it was agreed that the Civil Contingencies Team should continue to operate its emergency co-ordination role but that the Emergency Control Centre should not be activated.

### Co-ordination & Communication Between Teams

The co-ordination of information and contact between teams working on the response and recovery aspects was initially sporadic as it was unclear who in which of the different teams across different departments was actually leading on specific aspects. This situation improved greatly after the first weekend of flooding, however, greater clarity on roles and responsibilities of individual teams is needed

and arrangements for contact through a main number/person for each team needs to be established to assist in moving the practical co-ordination and liaison between teams away from front line staff to allow them to focus on the operational response at the scene(s).

#### **Actions Summary in this Section**

7. Early communication of flooding occurrences from the Drainage Team to the Civil Contingencies Team should occur even before activation of the Multi-Agency Flood Plan (Part 2) to ensure that a fuller assessment of the circumstances being face is achieved at the corporate level and to ensure decision making is based on all relevant information and therefore appropriate action taken.
8. The decision to activate the Emergency Control Centre needs to be taken at an earlier stage with consideration given to lowering the threshold of when activation might occur. The decision to open, continue or close an Emergency Control Centre should be revisited on a planned schedule with the suggestion of this being twice daily.
9. Clarity of individual team roles and responsibilities needs to be reviewed and documented within the flood plan. This should specifically clarify contact arrangements within individual teams for liaison and information sharing which significantly reduces the direct communication with front line staff by those not within their direct management structure.
18. The publication of key contacts on the intranet for individual officers responsible for co-ordinating specific aspects of the emergency response at different times should be undertaken. A specific page should be pre-prepared for such use in all emergencies to facilitate better communications.

### **Duty Team, Environment Dept & Highways Issues & Resources**

#### Shifts, Rota & Workforce

Similar to the support and relief needed by the Tactical Officer it became apparent that staff were working exceptionally long hours on top of their normal work hours and it was difficult to establish work shifts and rota systems during the emergency response and initial recovery operations. Additionally, the staff responding to the incident were under considerable work pressures with rotas and frontline capacity requiring short notice review throughout the rapid pace of the three episodes of flooding.

#### Duty Team Equipment & Training

The Council's Duty Team indicated that the mobile phones they were using were susceptible to the heavy rainfall and a phone equipped to cope with all weather conditions should be considered for the future. Additionally, these on-site officers experienced difficulties in maintaining battery charge due to excessive use and did not have available extra batteries nor charging facilities for batteries either in their cars or for mains supply.



Access around the borough became extremely difficult and whilst 4x4 vehicles are available the lack of training on these for the Council's Duty Team prevented them from using the appropriate vehicles instead having to revert to their own cars and having to walk considerable distances at the flood scenes.

Additionally, all staff responding to, or working at the scene of, an emergency should be wearing appropriate Personal Protective Equipment, be working in line with formal and dynamic risk assessment processes, as well as following relevant health and safety procedures/measures. It was considered that many of the front line staff had had little or no training in working at the scene of a flood and in addition the Council also became aware that it had no records or information pertaining to appropriate immunisations and related advice for staff had to be obtained and distributed at the time.

### Resources

A reduction in availability of trained staff and equipment/plant resources to deal with a widespread and/or out-of-hours incident became apparent. Staff were generally extremely willing to assist over the weekend and management clarification was required around payments and time off in-lieu arrangements.

Mutual aid with surrounding local authorities provided limited resilience as the widespread weather conditions affected our neighbouring authorities who had committed their own resources (which have also been reduced due to financial pressures) for responding to flood consequences. The majority of these authorities have also recently taken decisions to take front line staff off out-of-hours rota based call-out system and is considering these issues mutual aid will need to be sought from further afield.

#### **Actions Summary in this Section**

10. A specific role to establish working shifts and rotas during emergency responses should be given to an officer not engaged in off-site or other extensive response works within each departmental business continuity plan to ensure staff are provided with necessary down-time away from the response. Such an officer should also ensure hot debriefs for staff coming off a shift are also undertaken. This general arrangement also to be captured corporately in the Humanitarian Assistance Functional Plan.
3. The Council's Employment Agency are able to supply standby staff, for both in and out of hours work, once the staffing requirement is identified and agreement with agency workers agreed. The Environment, Housing & Neighbourhoods Department should engage the Employment Agency to identify and supply contact details of agency workers who could provide cover for essential work roles, especially during emergencies.
27. Consideration should be given to staff attendance at training for emergency response which reviews and confirms staff roles during an emergency, balanced with the need to maintain normal day-to-day activities.

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28. The Council's Duty Team should be provided with all weather phones, with additional batteries that can be charged separately to the phone using both the mains power supply and in-car 12v systems.
29. The Council's Duty Team members should undertake training in the driving and use of the Council's 4x4 vehicles to enable better and safer access to incident scenes where required.
11. The Council's Duty Team should review and amend all of its operating procedures, roles, responsibilities and resources to take account of its emergency response and recovery function and ensure these are documented into a completed emergency plan which must be authorised through the Civil Contingencies Team and Strategic Risk & Resilience Forum.
30. Continue to ensure arrangements for having sufficient Environment staff available to respond to emergencies of various types out-of-hours, including the application of the Corporate Standby & Call-Out Policy.
31. The Environment, Housing & Neighbourhoods Department should work with staff likely to respond to the scene of flooding (including clean-up operations) to ensure they have the necessary Personal Protective Equipment, have been immunised appropriately (if necessary), and have received training in both health and safety and specific issues around working in or around flooded areas.
32. The Council should review dependencies on, and the effectiveness of, existing mutual aid agreements with neighbouring local authorities especially those within the same regional footprint which can be affected by the same weather conditions. Mutual aid agreements with local authorities further away should be considered.
12. The Site Clearance Functional Plan should be completed to reflect the works required for clearing affected areas following a flood.

## Humanitarian Assistance

A separate debrief will consider the humanitarian assistance issues and lessons from the flooding response and recovery, however, some key issues are detailed here.

Due to a number of evacuations, the Council Duty Team at the scene decided to open Darwen Leisure Centre as a Rest Centre on Friday night. Overall a total of 8 people (2 families) used the rest centre and were later housed temporarily over the weekend in existing unoccupied housing stock. A small amount of bedding and basic food supplies were purchased to facilitate this from supermarkets who opened especially for this purpose. Some difficulties were experienced in co-ordinating the purchase, collection and transportation of the purchased items as resources to do this were scarce. In addition, existing supplies on sleeping bags and basic clothing were inaccessible due to these being stored at Davyfield Road Depot which was extremely busy and did not have the resources to spare to access the stocks.



Operation of the rest centre was achieved by utilising existing staff from Darwen Leisure Centre supported by one or two emergency staff volunteers. Volunteers currently registered were difficult to contact on the night and, where contact was made, they were largely unavailable at short notice. The Rest Centre itself was closed at 1.00am on Saturday morning but was reopened as a precautionary measure due to a reoccurrence of flooding nearby where

residential and commercial properties had to be evacuated. No evacuees attended, however, the operation of the rest centre on this occasion will be debriefed separately.

Support to vulnerable people was provide to those that the Council were aware of, however, no multi-agency effort was instigated to gain a fuller picture of any vulnerable people who may have been affected – although the main threat of flooding was over very quickly and such a task would not have completed on time to assist. The Adult Social Service Department contacted many residents by phone to assess needs and where appropriate undertook to provide necessary support, including the need for sand bags although these were generally not delivered to specific addresses. During recovery stages door knocking by the Council and Environment Agency identified some additional people who appear to be vulnerable and these were also contacted by Adult Social Services.

An issue that became apparent through the debrief process was the need to improve understanding by the Council Duty Team in terms of the support that can be provided by the Council during emergencies in terms humanitarian assistance to the public, not least of which is the operation of rest centres. The specific issue in this case was the refusal of some members of the public to evacuate as they would not

leave pets behind. The Humanitarian Assistance Functional Plan covers such issues and makes provision for dealing with and temporarily housing pets and this advice could have been given to residents needing to evacuate if the on-site Duty Team Staff had been aware of it.

### **Actions Summary in this Section**

13. Clearly defined procedures to be written to cover the process of purchasing, collecting and transporting goods for use in humanitarian assistance purposes.
33. Storage and access to humanitarian assistance stocks, currently at Davyfield Road Depot, to be revisited and revised if required to ensure ease of access during emergency responses.
34. Training to be provided to the Council's Duty Team Officers on humanitarian assistance, especially in relation to rest centres, vulnerable people and provision for pets during evacuations.

### **Public Helpline & Business Engagement and Public Relations**

A public helpline was not implemented over the weekend of the 23<sup>rd</sup> & 34<sup>th</sup> June but was instigated for the following expected severe rainfall and flooding the following week. Early establishment of the helpline would have been of greater assistance and should be included in the early stages of all Flood Plan activations or responses in the future. Additionally, a separate number should always be used for emergency public helplines to ensure that messages being given out are correct. On this occasion a decision was made to use the existing drainage issues phone number as the helpline number for the best intention that the public would already be used to calling this particular number. However, the existing pre-recorded message was not removed caused some confusion amongst callers. Using a separate line will avoid any confusion and callers using other numbers can always be transferred.



The Communications & Marketing Team were kept apprised of the situation as it has unfolded including key impacts and works progress. Key information was disseminated to the public, media, Members, and staff as appropriate and in a timely fashion utilising multiple methods, including social media, website, intranet, radio and newspapers.

Public and media communications may have suffered initially due to the lack of internal information co-ordination caused by a lack of understanding of roles and clear points of ongoing contact and liaison (see the section on [Co-ordination & Communication Between Teams](#)).

Members play a key role in community liaison and in a number of cases provided information and practical support to some residents more seriously affected by flooding. During the response Members needed to contact officers from various teams at different times. In considering this it is recognised that there is currently no single route for Members to call, or to receive information from, to ensure they are regularly updated on the response and recovery efforts. Likewise there is no single point of contact defined clearly within emergency plans for dealing with and co-ordinating issues identified by Members. Also, on a number of occasions different teams worked to resolve the same or similar issues raised by different Members and this clearly indicates a need for better co-ordination in this area to improve support to elected members.

Additionally, it is important that Council officers and Members understand the issues involved with emergency response and recovery and that established emergency planning media protocols are regularly reviewed and adhered to.

#### **Actions Summary in this Section**

19. Early establishment of a public helpline to be included in arrangements within the Multi-Agency Flood Plan (Part 2).
20. Arrangements for the public helpline to be updated within the Communications & Engagement Functional Plan to always use the designated emergency helpline number rather than existing numbers. In addition, recorded messages must be managed effectively and frequently to ensure that correct messages are being provided to the public.
21. A single point of contact and helpline for sole use by Members should be established to provide regular updates during emergencies and to co-ordinate work identified by members with Council departments and teams. Additional training via the Emergency Planning College is also available for Elected Members.
22. Media protocol for Council officers and members to be regularly reviewed to ensure standard procedures are followed to assist in avoiding common problems when dealing with the media and to ensure public messages from the Council, and its partner agencies, are consistent and co-ordinated.



## Sandbag Policy

The Council issued approximately 6,500 sandbags over the duration of the flooding and ongoing threat in response to considerable requests from the community. Whilst it is not the responsibility of local authorities or the environment agency to supply sandbags to the public, on this occasion the Council deemed it to be an appropriate action to take considering the impacts of the flooding. The Council spent

over £14,000 on the purchase of sandbags and sand, however, this does not take into account the works undertaken to fill, distribute, or collect the sandbags themselves.



Consideration of the health hazards posed by used sandbags (as advised by the Health Protection Agency) which have been exposed to flood water, which is invariably contaminated with sewage and other substances, leads to the conclusion that they must be disposed of safely and appropriately in a timely fashion.

It remains the responsibility for owners of private property, whether this be land, residential housing, commercial or other property, to ensure that their properties are resilient to flooding – especially where such property is within a known fluvial or pluvial flood risk area. The Council is not responsible for providing sandbags in such circumstances and needs to consider its position for any future flooding incidents to ensure it can communicate to the public clearly and/or provide sandbags if that is the decision that is reached.

### Actions Summary in this Section

14. The Council should reconsider and confirm its sandbag policy which clearly sets out responsibilities, establishes when sandbags will or will not be provided to the public, provides arrangements for the disposal of sandbags to ensure the protection of public health, and ensures that these issues are communicated clearly to the public. Property owners should also be advised on their own responsibilities to protect their property from flooding in the future. Policy to be presented to Councillor Faryad Hussain's Senior Policy Team (SPT).



## Recovery/Restoration

### Coordination, Information & Communication

The co-ordination of recovery efforts was agreed by the Deputy Recovery Functional Co-ordinator and the Head of Civil Contingencies on Monday 25<sup>th</sup> June to be left with Director of Environment, Housing & Neighbourhoods. This was decided as the majority of remaining issues were related to damage assessments and repairs to highways, footpaths, infrastructure and parks. At this stage no further severe weather was forecast and the decision at the time appears justified, however, this meant that no Recovery Co-ordination Group was established which would have met the multi-departmental/agency issues during subsequent flooding and may have reduced further impact of communities.



#### Actions Summary in this Section

35. Recovery Co-ordination Group to be formed following all incidents which have a significant impact on one or more of the borough's infrastructure, community/human welfare, businesses/economy or the environment. Significant being defined as requiring the Council to deploy more than normal day-to-day resources to respond to or recover from an incident.

### Business Engagement

Businesses who were affected by the flooding were clearly seeking information on flood recovery, insurance and other recovery issues from an early stage (including whether the Council would be making a financial provision for business support). Calls coming into the Council through various routes were passed around as it was unclear to staff who was dealing with business enquiries of this nature. Additionally, there was little known pre-prepared information to give to businesses initially and took some time to find and confirm through a range of websites and the Environment Agencies Floodline. However, during this time, a number of key business visits (such as WEC Group and Kenley Warehousing) were being undertaken by the Director of Regeneration and other key personnel. Subsequently, the Regeneration Department's Development Team (although not involved in an operational sense during this particular situation) took up the reins to co-ordinate with affected businesses and visited/called those commercial premises affected, as well as those at potential risk such as at Railway Road in Darwen, to provide at least a single point of contact for advice from the Council on an ongoing



basis and which continues to be provided during the recovery stages as emergency and other remedial works are undertaken. This was a very early launch of a service being newly formed entitled 'business buddies' which involves Council officers 'adopting' local businesses and bringing issues back in-house for resolution (and had previously been piloted within the Development Team and subsequently rolled out to Council Directors, primarily in support of business growth).

#### **Actions Summary in this Section**

23. Formalisation of the 'business buddies' and/or commercial liaison role by the Regeneration Department should be formalised within the Communications & Engagement Functional Plan.
24. Consideration as to how calls will be handled from businesses received through the Contact Centre and/or Public Helpline to be considered and reflected in the Communications & Engagement Functional Plan.

### **Infrastructure Issues**

At time of writing the blockages to drains were still being cleared and full assessments over damage cause to culverts and other elements of infrastructure were still being assessed, however, it was estimated that a total cost of £150,000 would be incurred just for highways repairs.

Full details of infrastructure damage and investigations into future preventative measures will be included in the report under the Flood & Water Management Act 2010 and are out of the scope of this report, however, the debrief specifically noted that Darwen should be prioritised in terms of infrastructure repairs and improvements both internally and with the Environment Agency.



Additionally, it was considered important to review the frequency of gully cleaning services to maintain their capacity to deal with flood water.

#### **Actions Summary in this Section**

36. The Council should assess the impact of potential budget pressures from flood recovery, response and its future priorities for infrastructure repairs and improvements both internally and with the Environment Agency.
37. The Council should reconsider the frequency of its gully cleaning services especially around known flood risk areas to preserve the capacity of existing infrastructure to move water and assist in preventing flooding.

## Initial Summary of Expected Cost Implications

Initial cost estimates are not currently available as, at time of writing, they are still being compiled. However, the Council is considering a potential claim under the Bellwin Scheme for re-imbursement following expenditure from the flooding.



The threshold for claims under Bellwin for 2012/13 is an expenditure for emergency response of £504,667 which must fall under specific criteria (which can be found in Appendix A). This figure is specific to Blackburn with Darwen Borough Council. Other emergency response expenditure within 2012/13 can also be taken into account although no incidents took place prior to the June 2012 flooding that incurred spending eligible to be included in a Bellwin claim.

Additionally, on the 9<sup>th</sup> August 2012 the Council's Executive Board agreed an infrastructure reserve of one million pounds for funding flood defence and remedial works.

## Community Engagement, Resilience and Home Flood Defences

Community resilience in this instance can be shown at being at a very low level despite communications from the Environment Agency to those in Flood Risk areas over many years. The Council and Environment Agency should collaborate to improve community resilience to flooding by promoting flood preparedness, flood prevention, innovative flood defence products for housing and general flood awareness raising campaigns.

### Actions Summary in this Section

38. A community resilience programme related to this flooding incident to be established and maintained.
39. Completion of the planned arrangements for Community Resilience prior to, during, and following an emergency should be achieved as part of the Communications & Engagement Functional Plan.

## Appendix A : Bellwin Scheme

### Overview

The Bellwin threshold for 2012/13 is £504,667. This includes eligible spend on any incident across the year (so expenditure must be recorded concerning eligible spend on this occasion, even if it is well below the threshold, in case further spends on other incidents occur this year).

A Bellwin scheme may be activated in any case where an emergency or disaster involving destruction of or danger to life or property occurs and, as a result, one or more local authorities incur expenditure on, or in connection with, the taking of immediate action to safeguard life or property, or to prevent suffering or severe inconvenience, in their area or among its inhabitants. There is no automatic entitlement to financial assistance: Ministers are empowered by Section 155 of the Local Government and Housing Act 1989 to decide whether or not to activate a scheme after considering the circumstances of each individual case.

### Claim Eligibility

In order to meet the basic statutory requirement, expenditure must have been incurred:

- by a local authority in England on, or in connection with, the taking of immediate action to safeguard life or property or to prevent suffering or severe inconvenience, in its area or among its inhabitants;
- as a result of the incident(s) specified in the scheme which involved the destruction of or danger to life or property.

Insurable expenditure is ruled out – this would include spend normally covered under the Zurich Municipal SELECT Policy

### Examples of Incidents That Would be Expected to Qualify

Subject to meeting the minimum statutory requirements, the following are examples of expenditure likely to qualify for grant:

- in relation to *non-administration* purposes, the costs of setting up temporary premises including costs of removal, increased costs due to rent, rates, taxes, lighting, heating, cleaning and insurance;
- hire of additional vehicles, plant and machinery that are not those already in use by the authority, and incidental expenses;
- removal of all trees and timber which are or may be dangerous to the public, including trees in public parks, local authority trees on highways, and trees owned by private householders which have fallen on or threaten public highways or rights of way;
- the costs of initial repairs to highways, pavements and footpaths, where a tree, item of street furniture or debris from a damaged building has fallen, and the surface of the road must be replaced at the time or temporarily patched (however, subsequent permanent repair would not qualify);

- the costs of initial land drainage works to clear debris and unblock watercourses which are or may be the cause of danger to the public (however, long-term repair or replacement of previously dangerous or damaged structures would not qualify);
- the costs of other work to clear debris causing obstruction or damage to highways, pavements and footpaths;
- additional temporary employees or contractors, to work on the emergency or replace permanent employees diverted from normal work;
- special overtime for employees, either during the emergency for overtime worked on the emergency itself, or afterwards to catch up on work from which they were diverted by the incident;
- emergency works required to safeguard dangerous structures, including making them secure (where not insurable);
- costs of evacuating people from dangerous structures, and temporary rehousing;
- costs of temporary mortuaries;
- costs of providing emergency supplies of food and other emergency provisions, and key services to affected communities during the period of the emergency;
- costs of maintaining key communications, in particular clearing roads or providing emergency information to affected communities;
- costs incurred under the Military Assistance to the Civil Community Scheme – such as the use of helicopters.
- where repair is insufficient, the removal and replacement of street lighting, street signs, bus shelters and other street furniture, fences, railings, and uninsurable outbuildings damaged by the incident, where in its damaged state it presents a danger to public safety or security;
- legal, clerical and other charges incurred on the above work;

In general, the immediate nature of emergency expenditure means that capital expenditure is unlikely to qualify for grant, but there may be limited circumstances in which a contribution could be made to the cost of a capital item. The authority must demonstrate that this secures better value for money than current expenditure and is connected to immediate action to safeguard life or property or to prevent severe inconvenience. Specifically it must demonstrate

- given the existence of wider capital budgets, why additional (as opposed to simply reprofiled) capital expenditure was necessary to safeguard life and property; and

- that this capital expenditure offered better value for money than the alternative of current expenditure. The Department should be consulted before including any capital expenditure in a claim.
- Expenditure in respect of works undertaken by internal trading organisations (or internal trading services (formerly Direct Services Organisations) in response to an emergency will be eligible for grant in the same way as other expenditure of the Local Authority – i.e. if it is additional to what the authority would have paid in the absence of an emergency and is otherwise eligible, it will qualify for grant.

### **Examples of Incidents That Would Not be Expected to Qualify**

The following are examples of expenditure that would normally *not* qualify under this scheme:

- costs which are normally insurable, whether by the authority or any other party (e.g. under household insurance policies);

The Department currently takes the Zurich Municipal SELECT policy, that can now be obtained for costs exceeding £100,000, as its definition of what is normally insurable by the authority for the purpose of schemes set up under section 155. Authorities should in particular note that:

- a) the shoring-up or dismantling of damaged buildings is an insurable cost;
  - b) authorities whose policies may bear less risk than the Zurich Municipal SELECT Policy would still be bound by its definition of normally insurable risks as regards qualifying expenditure under a Bellwin scheme: authorities whose policies include cover for greater risks than the basic SELECT Policy should exclude from their qualifying expenditure all costs for which they are covered and will be compensated.
  - c) Damage caused by terrorism remains an insurable cost.
- Environment Agency levy costs and those costs reportable for RSG purposes relating to flood defences.
  - loss of income (e.g., from facilities closed as a result of the emergency), as this falls outside the scope of section 155 of the Local Government and Housing Act 1989;
  - the normal wages and salaries of the authority's regular employees, whether diverted from their normal work or otherwise, and the standing costs of the authority's plant and equipment;
  - longer term works of repair and restoration, such as tree planting and repair or refurbishment of damaged but not dangerous structures;
  - any element of betterment, e.g. repairs to buildings to a significantly higher standard than their condition on the day before the incident;
  - expenditure eligible for any other specific grants, e.g. police grant;
  - any amounts in respect of specific works on flood defence or coast protection which had already been allocated within budgeted expenditure to these works before the incident occurred (however, subsequent amounts for emergency work resulting from the incident above the level of any amounts thus allocated would usually be eligible for assistance);
  - any expenditure on flood defence or coast protection that will be compensated by the Department for the Environment, Food and Rural Affairs by means of grant or credit approvals;
  - any capital expenditure which is of a long term or preventive nature and not therefore connected with the immediate action to safeguard life or property following an emergency or disaster



## Appendix B : Timeline of Weather and Flood Forecasts

Throughout this timeline the following colours indicate the different levels of Weather and Flood Alerts/Warning.

No risk of severe weather or flooding
Low Risk of severe weather or flooding
Medium Risk of severe weather or
High Risk of severe weather or flooding

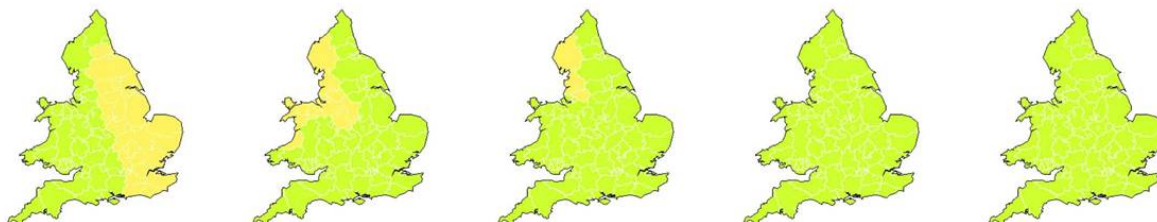
### Chief Forecasters Assessment – Issued Friday 15<sup>th</sup> 2012 at 7.54am

A band of heavy rain has moved north across much of England and Wales during Thursday night. This will be followed by further bands of rain, heavy at times for western parts of Wales through Friday and more widely across Wales and northern England during Friday night and well into Saturday. Meanwhile, heavy showers and thunderstorms are expected to develop during Friday, with the main area of concern being across northern England, where these are likely to be slow moving with the risk of hail and squally winds.

Locally parts of southern and western Wales and the southern Pennines can expect 50-75 mm of rain during this period, whilst thunderstorms during Friday afternoon and evening could deliver as much as 30 mm within 2 hours in a few places in northern England.

### Flood Guidance Statement 10:30hrs 21 June 2012

Our assessment of daily flood risk for England and Wales is below.



10:30 - 23:59hrs Thursday 21 June 2012	00:00 - 23:59hrs Friday 22 June 2012	00:00 - 23:59hrs Saturday 23 June 2012	00:00 - 23:59hrs Sunday 24 June 2012	00:00 - 23:59hrs Monday 25 June 2012
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#### Headline

**Potential to escalate the flood risk to amber in northwest England for Friday.**  
There will be an afternoon update to the FGS on Thursday.

#### General Overview of Flood Risk

There is a LOW risk of surface water flooding from slow moving thundery showers across parts of southeast England, East Anglia, the north and east Midlands and the north of England on Thursday afternoon.

On Friday an area of persistent rain, perhaps with localised torrential downpours, brings a LOW risk of both surface water and river flooding for parts of northwest England, perhaps especially Lancashire and Greater Manchester, west, north and northeast Wales.

On Saturday there is a low risk from surface water and river flooding in northwest England.

### Met Office Forecast – Issued Friday 15<sup>th</sup> June 2012 at 12.10pm

**Forecast for Monday 18<sup>th</sup> June 2012** - The next three days should see a good deal of dry, sunny and warm weather across England and Wales with only scattered, but perhaps locally heavy showers likely. Low pressure will bring breezy, wet weather to most areas by Friday. Temperatures are likely to be average or below average for the time of year.

### Regional Met Office Advisor Update – Thursday 21<sup>st</sup> June 2012 at 12.15pm

A complex, as yet still uncertain but potentially disruptive weather situation is beginning to unfold across the Northwest.

[Today] outbreaks of rain currently affecting the region, especially Cumbria, will continue drifting northwards and permit a drier interlude during this afternoon. However, later this afternoon further outbreaks of rain, locally heavy, will spread up from the south. There is a high likelihood of rain at some stage during the evening but today's Flood Guidance Statement (FGS) suggests little or no risk of disruption with all of NW England on Green (very low) flood risk today.

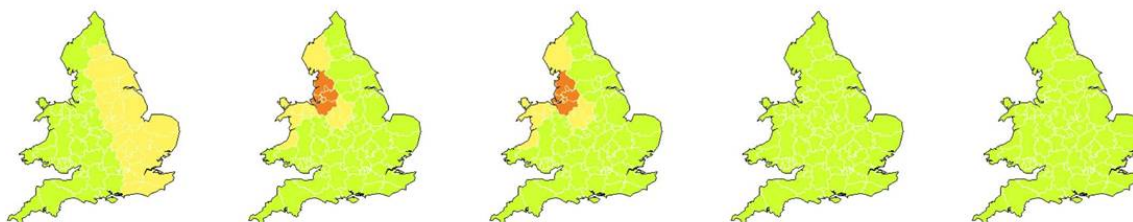
The situation has the potential to escalate tomorrow (Friday). A low pressure system will be sitting pretty much slap bang over us with various bands of rain circulating around it. The position of the low centre and the positional fixing of these rain bands remain subject to considerable uncertainty. All parts of the region will see further outbreaks of rain, some of it heavy, and there is a real risk that the main band of rain will eventually become anchored across the Northwest and in the process deliver very large rainfall totals to parts of the region. The FGS explains the associated flood risk in much greater detail and is worthy of careful perusal since this time it is Lancashire and Greater Manchester that currently appear to be most in the firing line. The FGS currently has all the region on Yellow (low flood risk) for Friday but an updated FGS will be issued this afternoon and if the signal for very high rainfall totals in the Northwest is maintained then it is likely that some parts of the region will be upgraded to Amber (Medium flood risk). In tandem with this the current Met Office Yellow Alert currently in force for the region on Friday is also under review and may too be upgraded to Amber early this afternoon. This will depend upon the analysis of further high resolution model output, currently underway here in Exeter HQ.

The situation doesn't end on Friday evening as the rain band has the potential to be sustained right through Friday night and into Saturday although again its position is subject to considerable uncertainty. There is hope that we will see some respite through Saturday daytime but this may prove temporary with the threat of further widespread rain developing as the weekend progresses with the risk of a further period of elevated flood risk.

I think that's probably enough for now. It's a balancing act at the moment between alerting you to the possibilities of sustained rainfall and resultant flooding over the next 24 to 96 hours, and emphasising that the situation is far from certain in terms of where the heaviest, most sustained rainfall will occur.

## Flood Guidance Statement 14:30hrs 21 June 2012

Our assessment of daily flood risk for England and Wales is below.



14:30 - 23:59hrs  
Thursday  
21 June 2012

00:00 - 23:59hrs  
Friday  
22 June 2012

00:00 - 23:59hrs  
Saturday  
23 June 2012

00:00 - 23:59hrs  
Sunday  
24 June 2012

00:00 - 23:59hrs  
Monday  
25 June 2012

### Headline

**Flood risk escalated to MEDIUM for northwest England for Friday and Saturday.  
Flood risk escalated to LOW for parts of Wales and The Midlands on Saturday.**

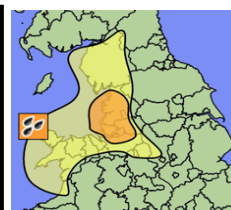
### General Overview of Flood Risk

There is a LOW risk of surface water flooding from slow moving thundery showers across parts of southeast England, East Anglia, the north and east Midlands and the north of England on Thursday afternoon.

On Friday and Saturday an area of persistent rain, perhaps with localised torrential downpours, brings a MEDIUM risk of both surface water and river flooding for parts of northwest England, perhaps especially Lancashire and Greater Manchester, as highlighted amber on the maps above. There is also a LOW risk of both surface water and river flooding outside these areas as highlighted yellow on the maps above.

### Chief Forecasters Assessment – Thursday 21<sup>st</sup> June 2012 at 2.37pm

A vigorous depression developing over the UK will bring further spells of rain to many regions during Friday before easing away early on Saturday. The heaviest rain for Wales is expected during the morning, when western parts could see more than 70 mm. During the afternoon and evening totals in areas within the amber zone could mount up to more than 100 mm, which has the potential to cause significant disruption.



### Environment Agency Lead Multi Agency Teleconference – Thursday 21<sup>st</sup> June 2012 at 3pm

Attended by Imran Munshi on behalf of Blackburn with Darwen Borough Council.

Met Office Advisor confirmed Flood Guidance Statement and Met Office Severe Weather Warning have been upgraded to Amber indicating a medium risk of flooding. Environment Agency report that River levels are fairly elevated for the time of year and the ground is already saturated. Currently no intention to operate the flood basins. Presently no operational issues. Trash screens and pumping stations checked and clear. No issues with flood storage basins at present.

### Regional Met Office Advisor Update – Thursday 21<sup>st</sup> June 2012 at 4.36pm

Latest forecast just to hand. Radar showing rainfall fragmenting and dying away across Cumbria so some improvement in the next couple of hours but further rain following from the south this evening so the respite will be temporary.

As for tomorrow (Friday) there remains a strong signal for a period of sustained and at times heavy rainfall to develop over NW England through the course of the day, accompanied by a freshening westerly wind which could touch gale force (50mph) along exposed coasts later tomorrow afternoon. The latest forecast has shifted the zone of heaviest rainfall slightly further northwards with the highest rainfall totals now targeted for Lancashire, but still with appreciable totals affecting Greater Manchester, Merseyside, north Cheshire and possibly south Cumbria too. Whether this trend in edging the largest rainfall totals slightly further northwards will continue is hard to say at present. Looking further ahead, the rain is set to continue well into tomorrow night before gradually fragmenting and weakening in the early hours of Saturday.

### Regional Met Office Advisor Update – Friday 22<sup>nd</sup> June 2012 at 8.43am

#### Today/Tonight:

No major changes in the forecast to report this morning. However, the latest computer runs have continued the trend we started to see yesterday in shifting the largest cumulative rainfall totals slightly further northwards again. Hence, although the general theme of a very wet day across the majority of the Northwest still holds, the highest rainfall is now expected across the northern half of Lancashire and the southern half of Cumbria.

As previous Flood Guidance Statements have indicated there is the potential for significant surface water excess as the rain keeps coming. The highest risk period for surface water-based disruption will be this afternoon and evening but localised issues may start to kick in this side of noon.

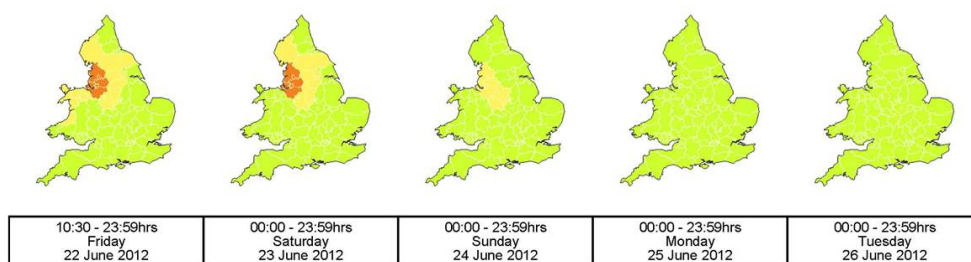
Through this evening and overnight we expect the main band of persistent rain to gradually pull away northwards into Scotland, leaving behind just a few scattered mostly light showers.

#### The weekend:

Saturday will, in a relative sense, show a marked improvement - there will be some further showers scattered around but nowhere on the scale or intensity of today's rain. However, the next weather system, waiting in the wings, looks set to deliver yet another spell of persistent rain during Saturday night and into the first part of Sunday. In other words the flood risk, be it fluvial or pluvial, seems likely to be on the agenda well into the weekend.

### Flood Guidance Statement 10:30hrs 22 June 2012

Our assessment of daily flood risk for England and Wales is below.



#### Headline

**MEDIUM and LOW river and surface water flood risk for significant disruption in parts of northwest England, Midlands, and northeast England for Friday and Saturday.**

**LOW risk of river and surface water flooding in parts of Wales on Friday.**

#### General Overview of Flood Risk

On Friday and Saturday an area of persistent heavy rain brings a MEDIUM risk of both surface water and river flooding for parts of northwest England as highlighted amber on the maps above. There is also a LOW risk of both surface water and river flooding outside these areas as highlighted yellow on the maps above.

The weather remains very unsettled with heavy showers and longer periods of rain later Saturday into Sunday therefore the LOW flood risk is extended into Sunday for parts of Northwest England and the Midlands.

**Chief Forecasters Assessment – Friday 22<sup>nd</sup> June 2012 at 11am**

An area of low pressure centred across the UK will bring further spells of rain to many regions during Friday before easing away early on Saturday. The heaviest rain will soon clear away from Wales, but a band of persistent and often heavy rain will be slow moving across the northeast of Northern Ireland, far southwest Scotland and western parts of northern England. Totals of 25-50 mm will build up fairly widely with 100 mm possible over the high ground of northern England. The potential for significant disruption is still most likely in the Amber area, which remains unchanged. Meanwhile, localised heavy, thundery downpours are expected to develop over more southern parts of Scotland and could produce 30-40 mm of rain within 3 hours.

**Regional Met Office Advisor Update – Friday 22<sup>nd</sup> June 2012 at 11.31am**

Please find attached this morning's Flood Guidance Statement (FGS) which details the flood risk across NW England through today and throughout the weekend. This stands at Amber (Medium) for all of the region except Cumbria where the FGS has stayed Yellow, based upon considerations of the likely impact of the rainfall upon the river network and of surface water impacts. Latest forecast information to hand confirms the wettest locations liable to be inland parts of north Lancashire along with south Cumbria, especially the SW quadrant of the county. The broad belt of persistent rain is expected to begin edging slowly away northwards this afternoon with Cheshire (especially south of Chester) the least affected part of the region. Borderline as to whether the more persistent and heavier rain will be clearing the Blackpool area by early evening but no change to the strong/gale force winds forecast for exposed sections of the coastline this afternoon/evening.

**Flood Alert Issued for Lower River Ribble & Darwen – Friday 22<sup>nd</sup> June 2012 at 12.15pm**

A Flood Alert has been issued by the Environment Agency for the Lower River Ribble and Darwen. Flooding is possible for River Ribble from Samlesbury and the River Darwen from Darwen including Blackburn, Preston, Walton-Le-Dale, Pleasington and Higher Walton Imminently. Low lying land and roads will be affected first. Heavy rain is forecast for today which will cause rivers to rise further.

**Environment Agency Lead Multi Agency Teleconference – Thursday 22<sup>nd</sup> June 2012 at 1pm**

Attended by Roger Lever on behalf of Blackburn with Darwen Borough Council.

Met Office Advisor confirmed that there was not much change from the forecast this morning. There has been a slight shift northwards from yesterday and the worst of the weather will now be over North Lancs and South Cumbria. Continuous rain and strengthening winds expected, up to 50 mph on the coast. It could be midnight before the weather starts to clear out of North Lancs. Tomorrow is expected to be better, likely non-disruptive rain. Environment Agency report that seven flood alerts have been issued, a couple more are expected later today. They also expect to issue some flood warnings this afternoon. They may operate Garstang basin at around 3pm and possibly Catterall later in the evening. Operations staff are checking screens and pumping stations. There are no significant issues so far. Roger Lever (BwDBC) reported a couple of blocked culverts on ordinary watercourses. He will advise locations to the Environment Agency in due course and advise if any flooding of properties occurs.



## Flood Guidance Statement 14:00hrs 22 June 2012

Our assessment of daily flood risk for England and Wales is below.



14:00 - 23:59hrs Friday 22 June 2012	00:00 - 23:59hrs Saturday 23 June 2012	00:00 - 23:59hrs Sunday 24 June 2012	00:00 - 23:59hrs Monday 25 June 2012	00:00 - 23:59hrs Tuesday 26 June 2012
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### Headline

**Update:** The predicted rainfall event is now underway over northwestern parts, with increasing rainfall totals and rivers over northwest England and parts of the Midlands are responding to this rainfall.

**MEDIUM and LOW river and surface water flood risk for significant disruption in parts of northwest England, Midlands, and northeast England for Friday and Saturday.**

**LOW risk of surface water flooding in parts of North Wales on Friday.**

### General Overview of Flood Risk

Over Wales the flood risk is now for only for surface water flooding over parts of northeast Wales.

On Friday and Saturday an area of persistent heavy rain brings a MEDIUM risk of both surface water and river flooding for parts of northwest and northeast England as highlighted amber on the maps above. There is also a LOW risk of both surface water and river flooding over northwest England and the north Midlands outside these areas as highlighted yellow on the maps above. Please refer to Area of Concerns map.

The weather remains very unsettled with heavy showers and longer periods of rain later Saturday into Sunday therefore the LOW flood risk is extended into Sunday for parts of Northwest England and the Midlands.

### Regional Met Office Advisor Update – Friday 22<sup>nd</sup> June 2012 at 3.32pm

**Sunday:** A Yellow Alert for rain has been issued for an area including Lancashire, Merseyside, Greater Manchester and Cheshire, covering the period 0000 to 1500 on Sunday. This is tied to the next weather system (briefly mentioned in an earlier communication) that is set to bring further rain across the region on Saturday evening/night.

### Flood Warning Issued for River Darwen at Waterfall in Blackburn – Friday 22<sup>nd</sup> June 2012 at 7.19pm

A Flood Warning has been issued by the Environment Agency for the River Darwen at Waterfall in Blackburn, Area A. Flooding is expected for Residential & commercial properties adjacent to the River Darwen in the Waterfall area of Blackburn, including Stancliffe Street, Hollin Bridge Street, & Albert Street imminently. Immediate action required. Flooding is expected to affect up to 103 properties in this area. More rain is forecast until midnight tonight which will cause rivers to rise further.

## Flood Guidance Statement 3:30hrs 23 June 2012

Our assessment of daily flood risk for England and Wales is below.



3:30 - 23:59hrs Saturday 23 June 2012	00:00 - 23:59hrs Sunday 24 June 2012	00:00 - 23:59hrs Monday 25 June 2012	00:00 - 23:59hrs Tuesday 26 June 2012	00:00 - 23:59hrs Wednesday 27 June 2012
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### Headline

**Update:** Significant flooding in parts of Northwest and Northeast England.

### General Overview of Flood Risk

Significant flooding is ongoing and could still happen in parts of Northwest and Northeast England. Some areas worst affected include Lancashire, Blackburn with Darwen and West Yorkshire. The amber on the maps is primarily to reflect the current situation although rivers are still rising in places, such as Cumbria. Please refer to the Area of Concern map.

The weather remains very unsettled with heavy showers and longer periods of rain later Saturday into Sunday therefore a LOW flood risk is extended into Sunday for parts of Northwest and Northeast England.



### Regional Met Office Advisor Update – Saturday 23<sup>rd</sup> June 2012 at 9.15am

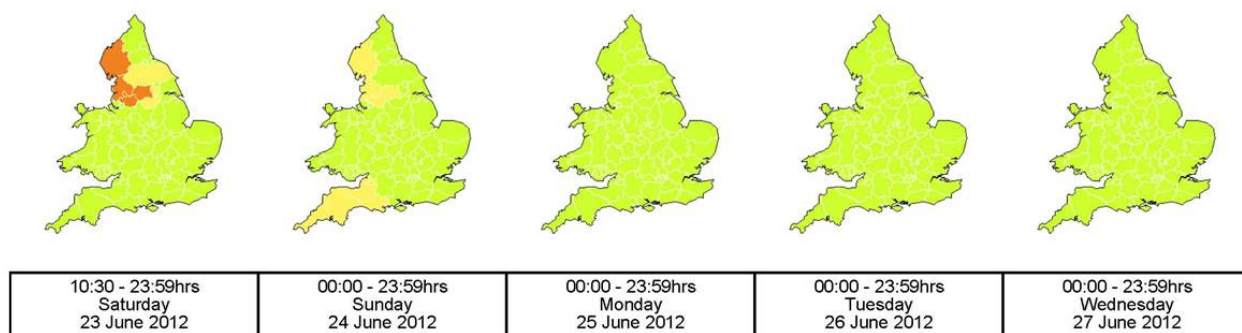
The effects of the last 24 to 30 hours' rainfall continue to be felt across the region and the remnants of the persistent rain band that has caused the flooding are still in evidence on the radar across the far north of Cumbria, an additional band of rain having taken its place overnight and currently straggling a good part of Cumbria and the far north of Lancashire. The Flood Guidance Statement was re-issued last night with Cumbria upgraded to Amber as river levels continued to rise and it is anticipated that the Flood Risk across Cumbria, Lancashire and Greater Manchester will be held at Amber for the time being to reflect the ongoing situation in the worst-affected areas.

As for the weather today those areas of rain referred to above should weaken in intensity and contract further through this morning although it may never become a completely dry picture across the region with 'bits and pieces' of mostly light rain still scattered around even through this afternoon. Attention then moves to this evening when the next weather system will spread further rain back across all parts of the Northwest. Although some heavier rain is possible for a time, the system will be moving through at a much quicker rate than the current one and the rainfall totals resulting from it will be much reduced compared to what we have seen in the past 24 hours.

It should be turning drier from the west during the early hours of Sunday morning and although there will be a few showers developing through the course of Sunday, the picture overall should be a steadily-improving one with a good deal of dry, bright weather ensuing. The improvement should be sustained through Monday which currently looks dry and bright with some welcome sunshine.

## Flood Guidance Statement 10:30hrs 23 June 2012

Our assessment of daily flood risk for England and Wales is below.



### Headline

**Significant flooding has occurred in parts of Northwest and Northeast England. Localised flooding is possible in southwest England on Sunday.**

### General Overview of Flood Risk

Significant flooding has already occurred in parts of Northwest and Northeast England. The amber on the maps above is to reflect the flooding that has already occurred. Recovery operations are on-going in those areas. Further outbreaks of rain over northern England today and tonight should bring much lower accumulations than those seen recently and further significant impacts are possible but are not currently expected. Therefore a LOW flood risk is extended into Sunday for parts of Northwest and Northeast England, mainly to reflect the on-going recovery operations.

The next FGS will be issued this afternoon to give an updated reflection of the on-going situation in northern England.

Widespread rain later today (Saturday) and into Sunday across southwest England will bring a low risk of river flooding there on Sunday, especially where the largest totals occur.

## Flood Guidance Statement 10:30hrs 23 June 2012

Our assessment of daily flood risk for England and Wales is below.



10:30 - 23:59hrs Saturday 23 June 2012	00:00 - 23:59hrs Sunday 24 June 2012	00:00 - 23:59hrs Monday 25 June 2012	00:00 - 23:59hrs Tuesday 26 June 2012	00:00 - 23:59hrs Wednesday 27 June 2012
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### Headline

**Significant flooding has occurred in parts of Northwest and Northeast England. Localised flooding is possible in southwest England on Sunday.**

### General Overview of Flood Risk

Significant flooding has already occurred in parts of Northwest and Northeast England. The amber on the maps above is to reflect the flooding that has already occurred. Recovery operations are on-going in those areas. Further outbreaks of rain over northern England today and tonight should bring much lower accumulations than those seen recently and further significant impacts are possible but are not currently expected. Therefore a LOW flood risk is extended into Sunday for parts of Northwest and Northeast England, mainly to reflect the on-going recovery operations.

The next FGS will be issued this afternoon to give an updated reflection of the on-going situation in northern England.

Widespread rain later today (Saturday) and into Sunday across southwest England will bring a low risk of river flooding there on Sunday, especially where the largest totals occur.

### Flood Warning for River Darwen at Waterfall in Blackburn Removed – Saturday 23<sup>rd</sup> June 2012 at 3.54pm

The Flood Warning for the River Darwen at Waterfall in Blackburn, Area A is no longer in force. The situation is improving. No further flooding is currently expected in this area. River levels are beginning to fall, and will continue to be monitored.

## Flood Guidance Statement 17:45hrs 23 June 2012

Our assessment of daily flood risk for England and Wales is below.



17:45 - 23:59hrs Saturday 23 June 2012	00:00 - 23:59hrs Sunday 24 June 2012	00:00 - 23:59hrs Monday 25 June 2012	00:00 - 23:59hrs Tuesday 26 June 2012	00:00 - 23:59hrs Wednesday 27 June 2012
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### Headline

**Significant flooding has occurred in parts of Northwest and Northeast England but river levels are falling. Localised flooding is possible in southwest England this evening and into Sunday.**

### General Overview of Flood Risk

18:00 Update: Surface water flood risk for Devon and Cornwall has been increased to LOW for this evening. Rain spreading across the southwest of England may be heavy enough to cause minor disruption in parts of Devon and Cornwall this evening and Somerset and Dorset around midnight and into the early hours.

That rain across southwest England will also bring a low risk of river flooding there on Sunday, especially where the largest totals occur.

Significant flooding occurred yesterday and overnight in parts of Northwest and Northeast England. Operational activity is still on-going in those areas, but the river flood risk has now been downgraded to LOW (yellow) to reflect the fact that river levels are now generally falling. Further outbreaks of rain over northern England tonight should bring much lower accumulations than those seen recently and further significant impacts, although possible, are not currently expected. Therefore a LOW flood risk is extended into Sunday for parts of Northwest and Northeast England, mainly to reflect the on-going recovery operations.

### Regional Met Office Advisor Update – Sunday 24<sup>th</sup> June 2012 at 10.58am

Last night's rain has moved well on out of the way but there are still a few light showers scattered around at the moment on what will be an improving day weather-wise with the afternoon and evening largely dry and bright.

This morning's Flood Guidance Statement (above) has Greater Manchester, Lancashire and Cumbria on yellow (Low Flood Risk) simply to reflect the ongoing disruption and associated recovery operations in the areas worst affected. Note the headline which emphasises that the risk of any further flooding is now very low. All Met Office severe weather warnings have now expired.

In terms of the weather over the coming few days, the picture looks dry for Monday and a good part of Tuesday. As warmer and increasingly humid air is drawn up across the country towards midweek this could set off a few sharp showers/thunderstorms both on Wednesday and Thursday with Friday currently looking breezy, still showery but somewhat fresher. There is currently no sign of any slow-moving weather systems threatening the type of prolonged rainfall we saw on Friday. However, should any heavy showers/storms materialise later in the week then there would be the risk of surface water issues to consider. In view of the easing of the weather situation this will be the last of the current communications.

### Flood Warning for River Darwen is no longer in force – Sunday 24<sup>th</sup> June 2012 at 3.38pm

The Flood Alert for the Lower River Ribble and Darwen is no longer in force. The situation is improving and no further flooding is expected in this area. River levels have started to fall and no further significant rainfall is expected.

## Flood Guidance Statement 23:00hrs 27 June 2012

Our assessment of daily flood risk for England and Wales is below.



23:00 - 23:59hrs Wednesday 27 June 2012	00:00 - 23:59hrs Thursday 28 June 2012	00:00 - 23:59hrs Friday 29 June 2012	00:00 - 23:59hrs Saturday 30 June 2012	00:00 - 23:59hrs Sunday 01 July 2012
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### Headline

**Flood risk is now LOW for northern parts of England during THURSDAY.**

### General Overview of Flood Risk

Torrential thundery downpours are likely over the shaded area during Thursday. This gives a medium likelihood of minor surface water flood impacts such as disruption to travel and flooding of individual properties. The overall flood risk is therefore LOW for Thursday.

### Regional Met Office Advisor Update – Thursday 28<sup>th</sup> June 2012 at 7.29am

An incursion of warm, high-humidity air across the region always provides the potential, at this time of year, for very heavy downpours and localised surface water flooding. Later this morning a band of showery rain will transfer northeastwards across the region as the warm, humid airmass is slowly displaced away to the east. However, within this band of rain there is scope for some localised torrential downpours, possibly accompanied by lightning and thunder. As is so often the case there will be something of a hit 'n miss nature to the rain, some areas seeing very little, others perhaps catching a deluge in a relatively short space of time. Should any downpours materialise the sheer intensity of the rainfall could easily overwhelm local drainage capacity and result in temporary surface water flooding and related issues, particularly in the more urban areas where disruption to transport could arise in a very short space of time. Even in the more rural areas key access roads could fall victim to short-notice flooding. Unfortunately we can't pinpoint the areas most at risk, even at this late stage, and thus need to alert the whole of the region to the possibility.

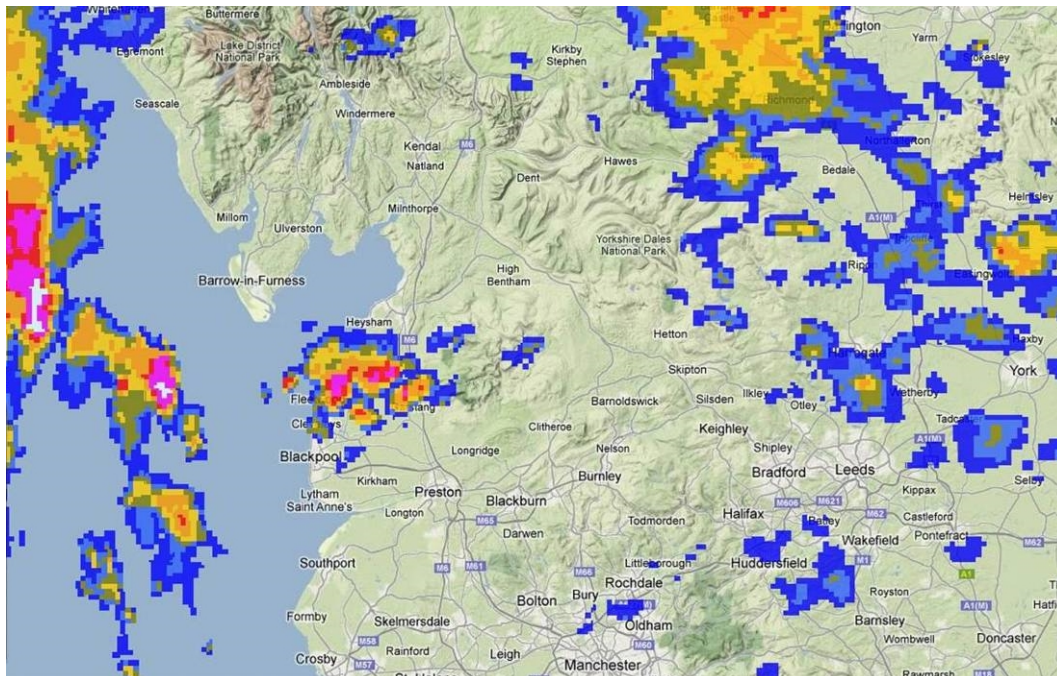
Later this afternoon and into the evening any remaining heavy showers and thunderstorms should move off across the Pennines. The Met Office have issued a Yellow Warning for rain (also attached above), valid from 0600 this morning up until midnight. Beyond today, although continuing unsettled with further rain at times, freshening winds and cooler/fresher temperatures, no further severe weather is currently anticipated across the Northwest.



### Regional Met Office Advisor Update – Thursday 28<sup>th</sup> June 2012 at 10.08am

The latest radar image available (see below, from 9.45am) on Hazard Manager shows two features of note:

1. Heavy showers already kicking off north of Blackpool, tracking towards Lancaster and then on into SE Cumbria - risk of very localised surface water excess from these.
2. Intense radar echoes (pink/white) now approaching the Cumbrian coast and tracking a bearing between NNE and NE - these too could result in localised surface water issues,



### Flood Guidance Statement 10:30hrs 28 June 2012

Our assessment of daily flood risk for England and Wales is below.



10:30 - 23:59hrs Thursday 28 June 2012	00:00 - 23:59hrs Friday 29 June 2012	00:00 - 23:59hrs Saturday 30 June 2012	00:00 - 23:59hrs Sunday 01 July 2012	00:00 - 23:59hrs Monday 02 July 2012
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#### Headline

**LOW surface water and river flood risk for northern England, the Midlands, east Wales and parts of Eastern England today.**

#### General Overview of Flood Risk

Torrential thundery downpours will develop today, mainly within the area shaded YELLOW. Localised minor surface water impacts are likely, and there is also a low likelihood of isolated significant disruption from surface water as well as from fast responding watercourses. Outside of this area there may also be isolated thunderstorms, and there is still a low risk of localised minor impacts.

The overall flood risk is therefore LOW for Thursday.

**Flood Alert Issued for Lower River Ribble & Darwen – Friday 28<sup>th</sup> June 2012 at 12.21pm**

A Flood Alert has been issued by the Environment Agency for the Lower River Ribble and Darwen. Flooding is possible for River Ribble from Samlesbury and the River Darwen from Darwen including Blackburn, Preston, Walton-Le-Dale, Pleasington and Higher Walton Imminently. Low lying land and roads will be affected first. Heavy showers throughout the day may lead to increased river levels, and possible localised flooding.

**Environment Agency Lead Multi Agency Teleconference – Thursday 28<sup>th</sup> June 2012 at 2.15pm**

Attended by Imran Munshi & Stewart Mashiter on behalf of Blackburn with Darwen Borough Council.

Met Office Advisor gave an update regarding the weather. The main focus at the moment is monitoring the intense rain band that is currently sat on the fringes of Lancashire and Cumbria. Environment Agency advised that the Incident Room in Preston has been opened as a precautionary measure. Currently the recovery phase from the flooding at the weekend is still underway and is coinciding with the forecast heavy rainfall. More stable weather conditions are expected from 18:00 onwards.

Currently three Flood Alerts are in force:

1. Lower River Ribble issued at 12:21
2. River Calder issued at 12:29
3. Upper River Lune issued at 13:39

The Environment Agency will continue to monitor the river levels and respond accordingly. It is unlikely that the Flood Alerts will reach Flood Warning thresholds. Field teams are currently checking/clearing grids and removing trees brought down over the weekend.

**Flood Guidance Statement 15:00hrs 28 June 2012**

Our assessment of daily flood risk for England and Wales is below.



15:00 - 23:59hrs Thursday 28 June 2012	00:00 - 23:59hrs Friday 29 June 2012	00:00 - 23:59hrs Saturday 30 June 2012	00:00 - 23:59hrs Sunday 01 July 2012	00:00 - 23:59hrs Monday 02 July 2012
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**Headline**

**Continued LOW risk surface water and river flood risk for northern England, Lincolnshire and parts of the Midlands until early this evening.**

**General Overview of Flood Risk**

UPDATE: Bands of intense thunderstorms will continue to affect northern England, along with parts of the north and east Midlands and Lincolnshire, this afternoon before clearing early this evening.

Earlier today similar thunderstorms have given localised significant surface water impacts in the Midlands, along with some minor river flooding impacts in fast responding watercourses. Similar impacts remain possible in the area shaded YELLOW above over the next few hours.

Outside of this area there may also be isolated thunderstorms, and there is still a low risk of localised minor impacts, but the overall flood risk is VERY LOW.

The overall flood risk is therefore still LOW for Thursday.

On all other days the overall flood risk is VERY LOW.

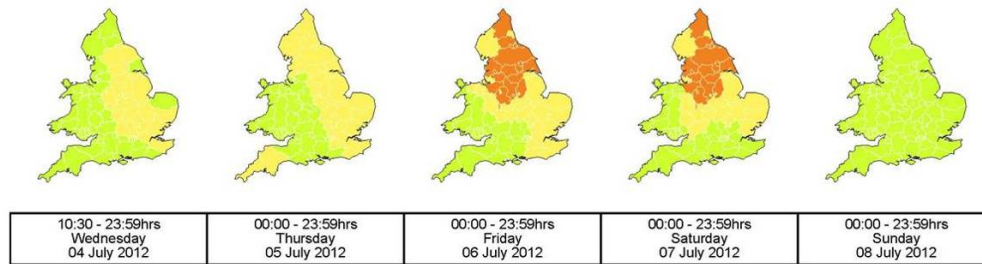
**Flood Warning for River Darwen is no longer in force – Friday 29<sup>th</sup> June 2012 at 9.59am**

The Flood Alert for the Lower River Ribble and Darwen is no longer in force. The situation is improving and no further flooding is expected in this area. River levels are now falling. The Environment Agency will continue to closely monitor the situation.



## Flood Guidance Statement 10:30hrs 04 July 2012

Our assessment of daily flood risk for England and Wales is below.



### Headline

**Potential for significant river and surface water flooding, with highest risk (AMBER) in northern England on Friday and Saturday.**

### General Overview of Flood Risk

A very unsettled period, with potential for river and surface water flooding due to either thundery showers or slow-moving bands of rain.

Areas coloured YELLOW for today and Thursday have a LOW risk of surface water flooding due to heavy showers.

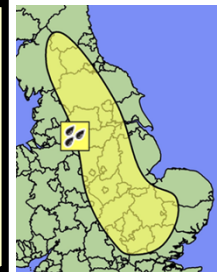
On Friday and Saturday, persistent and heavy rain is likely to affect parts of northern England, leading to a MEDIUM risk of river and surface water flooding. For details see the Area of Concern Map. The focus of the area deemed to be at higher risk may change closer to the event, and there remains a LOW risk in adjacent areas.

### Chief Forecasters Assessment – Wednesday 4<sup>th</sup> July 2012 at 12.23pm

An area of low pressure will move westwards across southern Britain from the near continent during Friday. As it does so it will draw a plume of warm moist air westwards across many parts of central Britain. This is likely to bring some very heavy and locally thundery rain during Friday and lasting into Saturday as it moves north. Through the whole two day period, 20 to 40 mm of rain are likely quite widely with as much as 60 to 100 mm possible in places, particularly on eastern upslopes of northern England. With the ground being saturated in some areas, these amounts of rain are likely to cause problems. As is usual in this type of situation there remains uncertainty as to which areas will be worst affected. We hope to firm up on the details as the week goes on so please watch for updates to this Alert.

### Regional Met Office Advisor Update – Wednesday 4<sup>th</sup> July 2012 at 12.38pm

This is the first of two briefings from me today, this one dealing just with short term issues. A second briefing will be issued shortly, discussing potential disruption from rain over the Friday/Saturday period. Just to advise that the Met Office have recently issued a Yellow Warning for rain valid 1400 to 2355 tonight. This covers the risk of localised disruption from heavy showers (i.e. mainly surface water-related issues) but, as you'll see, the warning only affects a relatively small proportion of the region, namely the Pennine fringes of Greater Manchester and Lancashire, together with parts of east Cumbria (east of the M6).



### Regional Met Office Advisor Update – Wednesday 4<sup>th</sup> July 2012 at 1.48pm

With low pressure intent on sitting close to the UK over the next few days the risk of another heavy rainfall event and associated flooding remains ever-present. We are indeed now starting to see signs of another potential event brewing for Friday and Saturday.

**Thursday:** An ongoing risk of localised heavy downpours, especially Lancs/Cumbria. Very hard to pinpoint which areas are more at risk than others at this stage. Flood Guidance Statement (FGS, attached above) is Yellow for surface water flood risk across Lancashire and Cumbria. No Met Office severe weather warning in force at present.

**Friday/Saturday:** An area of prolonged and at times heavy rain is forecast to extend across the region from an east or southeasterly direction. Given recent events and the state of the ground the Met Office, in discussions with the Flood Forecasting Centre, have raised an Amber Alert for rain, attached above, valid throughout Friday. On current estimates the rain is unlikely to reach our region until mid-to late morning on Friday but, once in, could persist for some hours. Today's FGS has also gone amber for Cheshire, Greater Manchester and Lancashire for both Friday and for Saturday, given the potential for impacts to be continued to be felt into the weekend. The maps on page 1 of the FGS indeed look rather ominous but scroll down to page 2 to see the 'Specific Areas of Concern' map and you'll see that the Amber (medium) flood risk is confined to the eastern halves of both Lancashire and Greater Manchester, along with the extreme east of Cheshire, rather than the whole of each county/LRF. Indeed it is in these Pennine areas that the highest rainfall totals are likely to be realised with rather lower accumulations as you head westwards towards the coast. Note that the subsequent timing and progression of the rain area later on Friday and into Saturday remains somewhat uncertain but, with hope, it will continue on its way into Scotland rather than becoming anchored across northern England.

**Regional Met Office Advisor Update – Wednesday 4<sup>th</sup> July 2012 at 2.54pm**

Just to complete a rather complicated picture the Met Office have now issued a Yellow Warning for heavy showers/thunderstorms and associated surface water flooding risk tomorrow (eastern parts of Cumbria, Lancashire and the extreme east of Greater Manchester) and an additional Yellow Alert for Cumbria for Saturday, the main threat of disruptive rain by then being focussed over NE England. We now thus have severe weather warnings in force for various parts of the region today, tomorrow, Friday and Saturday.

**Regional Met Office Advisor Update – Wednesday 4<sup>th</sup> July 2012 at 4.43pm**

The latest radar imagery is showing some locally intense showers now developing and tracking NW'wards (one over Merseyside, another in east Lancashire and others possible almost anywhere across the region in the next 2 to 3 hours) which could give temporary surface water issues wherever they occur, especially in the more urban areas. The warning currently in force only covers Cumbria so the advice is to keep a watch on Hazard Manager and monitor your local area. As a rough guide, where the radar is showing red, pink or white the associated rainfall intensity may be sufficient to exceed drainage capacity over short time scales.

**BwDBC Emergency Flood Co-ordination Group – Thursday 5<sup>th</sup> July 2012 at 9am**

This meeting formed due to forecast severe rainfall and flooding in Blackburn with Darwen Borough and to co-ordinate the councils response should this occur. Minutes attached at Appendix C.

**Flood Guidance Statement 10:30hrs 05 July 2012**

Our assessment of daily flood risk for England and Wales is below.



10:30 - 23:59hrs  
Thursday  
05 July 2012

00:00 - 23:59hrs  
Friday  
06 July 2012

00:00 - 23:59hrs  
Saturday  
07 July 2012

00:00 - 23:59hrs  
Sunday  
08 July 2012

00:00 - 23:59hrs  
Monday  
09 July 2012

**Headline**

**The river and surface water flood risk is MEDIUM (significant disruption) for eastern, central and northern England and northeast Wales on Friday and northern England on Saturday.**

**Potential to increase the flood risk for Friday / Saturday, with the possibility of severe disruption.**

**An updated FGS will be issued at 15:30 this afternoon.**

**General Overview of Flood Risk**

There is a LOW risk of surface water flooding across eastern and northern parts of England today, from slow moving heavy showers.

On Friday and Saturday, persistent and heavy rain is likely to affect parts of eastern, central and northern England, leading to a MEDIUM risk of river and surface water flooding. For details see the Area of Concern Map.

The focus of the area at the highest risk may change closer to the event, and there remains a LOW risk of river and surface water flooding in adjacent areas coloured yellow in the maps above.

Forecast rainfall totals, responses and likely impacts will be closely monitored with the potential to increase the flood risk for Friday / Saturday, which introduces the possibility of severe disruption.

**Regional Met Office Advisor Update – Thursday 5<sup>th</sup> July 2012 at 12.18pm**

The detail regarding severe weather developments over the next few days are becoming gradually clearer now - the story for today is unchanged but the detail for Friday and Saturday has altered somewhat and is discussed in detail below.

Wednesday: Today will evolve similarly to yesterday with some welcome warm sunshine at times but with a scattering of heavy, locally thundery showers developing in response by early to mid-afternoon. A Yellow warning is in force for today's showers covering Cumbria along with parts of N/E Lancashire, Greater Manchester and east Cheshire. The highest risk of surface water issues resulting from high-intensity rain over a short time period is greatest in the areas shaded Yellow (unsurprisingly) with disruption to transport links the most probable impact. That said, the risk of catching a heavy downpour extends to pretty much the whole of the region although any showers over Merseyside and west Cheshire should be more isolated. In the higher-risk areas the showers could linger well into this evening (the warning is valid til midnight) but should have largely faded away by midnight. Today's Flood Guidance Statement (FGS), attached above, shows Cumbria, Lancashire and Greater Manchester on Yellow (low flood risk) for surface water.

Friday: There is now a consistent signal for a swathe of heavy rain to emerge from the continent and track WNW'wards across England and Wales. In yesterday's briefing I expressed the hope that the band would move right through the region and on into Scotland. What is apparent now is that the area of heavy rain is set to take a much more southerly track with the southern half of the region receiving the main thrust of rain and potential disruption. There remains some uncertainty on the timing, extent and exact track of the rain but here's my current best guess. The first rain looks set to reach S and E Cheshire late tonight (towards 0600) but allow a couple of hours either side of this. Then, through Friday morning the rain extends across all of Cheshire, Greater Manchester, Merseyside and much but perhaps not all of Lancashire. Some heavy interludes look inevitable, more particularly towards the Pennine areas. At present Cumbria looks like escaping much, if not just about all of this rain. Through the afternoon the heaviest of the rain should pull away to the west, leaving a legacy of lighter, more intermittent rain. The FGS for Friday is now Amber for all areas except Cumbria and explains the flood risk arising from tomorrow's rainfall in detail. In particular, like yesterday, I urge you to have a detailed look at the 'Specific areas of concern' map on page 2, noting the differences in flood risk between areas A, B and C, each of which contains some of our region. The current Met Office Amber alert will be updated shortly with the Amber area-at-risk reflecting the subtle changes in the forecast over the past 24 hours.

Saturday: The clear signal emerging is that as we move from Friday into Saturday, so attention will shift from the south of the region to the north and specifically Cumbria. A separate stream of rain will, during Friday night, begin feeding in off the North Sea into NE England and across the Pennines into Cumbria. This rain looks set to be persistent and at times heavy, although, like its Friday counterpart, there is still some uncertainty as to exactly where it will become anchored and how much of the heavier rain makes it across into Cumbria. In this kind of set-up I would expect the larger (and potentially disruptive) rainfall totals to occur mainly to the east of the M6, particularly across the eastern halves of both Eden and Carlisle council domains and the adjacent north Pennine areas. The Amber alert currently in force for Saturday will also be updated in the near future. The FGS remains Amber for all areas except Cumbria - this reflects the potential for impacts of Friday's rainfall to continue to be felt into Saturday whilst across Cumbria the level of impacts arising from Friday night's and Saturday's rain currently warrant Yellow (low flood risk), rather than Amber (Medium) although this will be carefully monitored by the Environment Agency and Flood Forecasting Centre in case it needs revision. Across north Cumbria in particular the rain could linger right throughout Saturday and perhaps well into Saturday night although the general intensity should tend to diminish into Saturday night. Elsewhere Saturday looks a much quieter day in general although with the air still 'unstable' a few sharp showers can't be ruled out if skies brighten up and temperatures nudge upwards.

**Chief Forecasters Assessment – Thursday 5<sup>th</sup> July 2012 at 12.58pm**

An area of low pressure will move westwards across southern Britain from the near continent during Friday. As it does so it will draw a plume of warm, moist air westwards across many parts of central Britain. This is likely to bring some very heavy and locally thundery rain, with totals of 20 to 40 mm quite widely, and perhaps exceeding 60 or even 70 mm in places. With the ground being near-saturated in many areas, these amounts of rain are likely to cause problems, with the possibility of more significant impacts occurring (please see impact matrix). As is usual in this type of situation there remains uncertainty as to which areas will be worst affected, so it is possible that further adjustments will be made to either the northern or southern limits of the warning areas, so please check for updates.

**Chief Forecasters Assessment – Thursday 5<sup>th</sup> July 2012 at 1.35pm**

The complex depression and contorted frontal system will remain slow-moving across parts of Britain on Saturday, bringing further periods of heavy rain. 20 to 40 mm could fall quite widely, and amounts exceeding 60 or even 80 mm are possible within the amber area. Of greater uncertainty are amounts of rainfall across south western England, with some available data suggesting that this area may miss out on the worst of the rainfall. With the ground being near-saturated in many areas, these amounts of rain are likely to cause problems, with the possibility of more significant impacts occurring (please see impact matrix). As is usual in this type of situation there remains uncertainty as to which areas will be worst affected, so it is possible that further adjustments will be made to either the northern or southern limits of the warning areas, so please check for updates.



## Environment Agency Lead Multi Agency Teleconference – Thursday 5<sup>th</sup> July 2012 at 2pm

Attended by Stewart Mashiter on behalf of Blackburn with Darwen Borough Council.

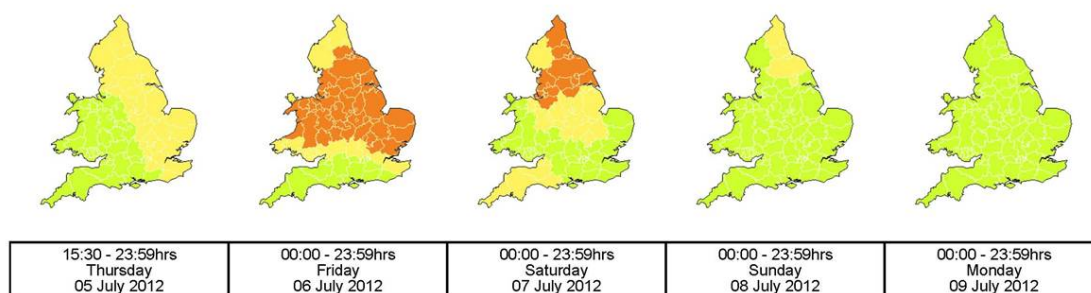
Met Office Advisor confirmed Flood Guidance Statement and Met Office Severe Weather Warnings indicating that there was not much to add to the earlier briefings given which all partners should have received. Advised to keep an eye on Hazard Manager, even though the situation looks quiet at the moment, things can change quickly. There could be a risk of surface water flooding later today and into tomorrow. Tomorrow the weather front will track westwards across the country. Cumbria should avoid the worst of the weather as the edge of the front seems to be shifting southwards. The next forecast is due at 4pm, and the Met Office Advisor will let partners know if there are any changes. Currently the time frame which looks the worst is from mid-morning until late afternoon tomorrow, with the east of the county being most at risk. From late tomorrow afternoon the rain looks to be light and patchy, with the focus moving to Cumbria from then onwards. Environment Agency report that there were no alerts or warnings currently in force for river or surface water flooding. The Environment Agency plans to issue flood alerts later this afternoon to raise awareness of the flood risk over the coming days in particularly at-risk river catchments, but not including Darwen. Additionally, as catchments are already wet, and river levels high, the forecast rain is likely to cause a sharp rise in river levels. The Environment Agency have operational teams out on site clearing grids and checking out stations. Extra staff have been put on standby to reflect the forecast escalation. After the events over the past 2 weeks, the EA are preparing early. The EA will distribute some messages for local authorities to use in communications with the public. Environment Agency officers will be sent out on site to the locations worst affected in the events over the past couple of weeks. Emphasis was made on the importance of preparing early and also of partnership working.

Blackburn with Darwen explained that they are preparing for the worst, strategically locating sandbags in high risk areas, and preparing communications messages. A request was made for a follow up discussion concerning risks linked with Jack's Key Reservoir.

A precautionary Strategic Co-ordination Group of the Lancashire Resilience Forum (LRF) has been arranged for 16:30. The EA are not currently intending on having another Flood Advisory teleconference tomorrow as it is recognised that all partners will be responding to the incident.

## Flood Guidance Statement 15:30hrs 05 July 2012

Our assessment of daily flood risk for England and Wales is below.



### Headline

**UPDATE:** The river and surface water flood risk is **MEDIUM** for large parts of eastern, central, northern England and north Wales on Friday and northern England on Saturday.

Within this broad area, on Friday, the potential impacts have been increased from significant to severe across parts of northern England, northeast Wales, and northern parts of the Midlands (see area of concern map).

If confidence increases in the locations of severe impacts, then the flood risk for a more focussed area on the FGS may be increased to **HIGH (RED)**, our highest level.

An updated FGS will be issued at 23:00 this evening.

### General Overview of Flood Risk

**UPDATE:** On Friday, the potential impacts have been increased from significant to severe across parts of northern England and northern parts of the Midlands (see area of concern map). If confidence increases in the locations of severe impacts, then the flood risk on the FGS may be increased to **HIGH (RED)**, our highest level.

There is a **LOW** risk of surface water flooding across eastern and northern parts of England today, from slow moving heavy showers.

On Friday and Saturday, persistent and heavy rain is likely to affect parts of eastern, central and northern England, leading to a **MEDIUM** risk of river and surface water flooding. For details see the Area of Concern Map.

The focus of the area at the highest risk may change closer to the event, and there remains a **LOW** risk of river and surface water flooding in adjacent areas coloured yellow in the maps above.

Forecast rainfall totals, responses and likely impacts will be closely monitored with the potential to increase the flood risk for Friday / Saturday, which introduces the possibility of severe disruption.

**Flood Alert Issued for Lower River Ribble & Darwen – Thursday 5<sup>th</sup> July 2012 at 3.57pm**

A Flood Alert has been issued by the Environment Agency for the Lower River Ribble and Darwen. Flooding is possible for River Ribble from Samlesbury and the River Darwen from Darwen including Blackburn, Preston, Walton-Le-Dale, Pleasington and Higher Walton this evening. Low lying land and roads will be affected first.

**Chief Forecasters Assessment – Thursday 5<sup>th</sup> July 2012 at 4.03pm**

An area of low pressure will move westwards across southern Britain from the near continent during Friday. As it does so it will draw a plume of warm, moist air westwards across many parts of central Britain. This is likely to bring some very heavy and locally thundery rain, with totals of 20 to 40 mm quite widely, and perhaps exceeding 60 or even 70 mm in places. With the ground being near-saturated in many areas, these amounts of rain are likely to cause problems, with the possibility of more significant impacts occurring (please see impact matrix). As is usual in this type of situation there remains uncertainty as to which areas will be worst affected, so it is possible that further adjustments will be made to either the northern or southern limits of the warning areas, so please check for updates.

**Precautionary Strategic Co-ordination Group Teleconference (LRF) – Thursday 5<sup>th</sup> July 2012 at 4.30pm**

Attended by Stewart Mashiter on behalf of Blackburn with Darwen Borough Council.

- Agencies to forward single point of contact by 8.30am Friday 6 July 2012.
- Confirmation that the LRF Severe Weather plan has now been activated.
- Police have allocated single points of contact for each territorial division.
- Concern was raised regarding Jacks Key reservoir and a small working group formed consisting of Blackburn with Darwen, LFRS & EA.
- Media response agreed to be on a local level lead by individual district authorities. Each authority to provide a media contact number, including out of hours by 8.30am Friday 5 July 2012

**Regional Met Office Advisor Update – Thursday 5<sup>th</sup> July 2012 at 5.41pm**

The overall message for tomorrow is unchanged with a swathe of rain, prolonged and locally heavy, set to move westwards across NW England through the morning and into the afternoon. The situation remains finely balanced and there is still scope for some error in the forecast, the main uncertainty being the northern limit of the rain with Cumbria still likely to miss most of it (some could still affect the southern half but unlikely to be disruptive). In general the heavier, more prolonged rainfall and thus the higher totals tomorrow are likely to be found towards the south of the region (Cheshire, Greater Manchester and Merseyside).

Changes to the Earlier Briefing:

1. Whilst the heaviest of the rain does indeed pull away westwards tomorrow afternoon there is now a risk of further pulses of rain following on behind which represents a slightly more pessimistic story than was conveyed earlier.
2. A second stream of rain is still forecast to reach Cumbria tomorrow evening with the potential for some heavier interludes embedded within. However, there is a hint that this rain band may start to drift northwards in to southern Scotland as Friday night wears on rather than become anchored over NE England and Cumbria, thus reducing the risk of impacts resulting from prolonged rain.

**Head of Civil Contingencies (BwDBC) Update – Thursday 5<sup>th</sup> July 2012 at 5.52pm**Weather Update

1. Heavy rain likely to arrive mid-morning tomorrow.
2. Then continue for several hours before clearing up during Friday evening.
3. Further pulses of heavy rain then possible throughout the night.
4. No exact idea from Met Office about how much rain is likely to actually fall but likely to be substantial.
5. Amber severe weather warning in force with potential to escalate to Red if the situations worsens.

EA

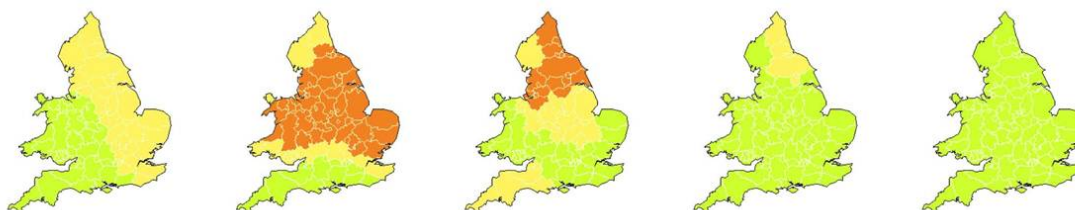
1. Flood alert issued for River Darwen
2. This would increase to a warning if Weather escalated to 'Red'

Environment Agency reported no reservoir risk but challenged this over potential risk at Jack's Key per operational information that it filled during last weeks floods. Further discussion took place after the teleconference and Environment Agency advises that they have ongoing monitoring taking place to ensure the reservoir is draining and doesn't become blocked. They also have no concerns over the ability of the dam wall to retain the amount of water experienced last weekend (i.e. 65000 cubic meters / approximately 5½ meters depth of water). I have asked for their key points in writing but their summary about the issues seems to be logical and appropriate. LRF Severe Weather Plan has been activated which solidifies multi-agency communications. Multi Agency Media Arrangements – LRF happy for local authorities at district and unitary to co-ordinate their own messages about impacts, evacuees, etc. Media contacts for all agencies have been shared.



## Flood Guidance Statement 18:00hrs 05 July 2012

Our assessment of daily flood risk for England and Wales is below.



18:00 - 23:59hrs Thursday 05 July 2012	00:00 - 23:59hrs Friday 06 July 2012	00:00 - 23:59hrs Saturday 07 July 2012	00:00 - 23:59hrs Sunday 08 July 2012	00:00 - 23:59hrs Monday 09 July 2012
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### Headline

**UPDATE:** This FGS confirms AMBER status for severe impacts (see Area of Concern Map).

**There is a real potential for escalating the flood risk to HIGH (RED) for Friday and Saturday.**

**Emergency responders should be ready for any escalation of flood risk tomorrow morning.**

**NB The next planned FGS will be at 09:00hrs Friday NOT 23:00 tonight as previously published.**

### General Overview of Flood Risk

**UPDATE:** On Friday, the potential impacts have been increased from significant to severe across parts of northern England and northern parts of the Midlands (see area of concern map). If confidence increases in the locations of severe impacts, then the flood risk on the FGS may be increased to HIGH (RED), our highest level.

There is a LOW risk of surface water flooding across eastern and northern parts of England today, from slow moving heavy showers.

On Friday and Saturday, persistent and heavy rain is likely to affect parts of eastern, central and northern England, leading to a MEDIUM risk of river and surface water flooding. For details see the Area of Concern Map.

The focus of the area at the highest risk may change closer to the event, and there remains a LOW risk of river and surface water flooding in adjacent areas coloured yellow in the maps above.

Forecast rainfall totals, responses and likely impacts will be closely monitored with the potential to increase the flood risk for Friday / Saturday, which introduces the possibility of severe disruption.

### Environment Agency Update Regarding Jack's Key Reservoir – Thursday 5<sup>th</sup> July 2012 at 6.11pm

A few points to note regarding Jack's Key Reservoir and our current management of the risk;

- The reservoir is known to partially fill on a regular basis to a depth of around 3m.
- On 23 June following heavy rain the reservoir filled to a depth of 5.5m.
- We have a reservoir engineer appointed who advises that at these levels the dam has historically performed satisfactorily and has shown no signs of instability.
- We are developing a project to improve the outlets whilst maintaining the flood attenuation benefit of the site (due for construction 2013/14).
- Following any flood event we regularly inspect the reservoir to ensure that water is freely draining through the outlets.
- The appointed reservoir engineer carries out quarterly inspections at the site.
- Our Ops delivery teams regularly check and clear the grid over the outlet shaft.

### Regional Met Office Advisor Update – Friday 6<sup>th</sup> July 2012 at 7.51am

The precise detail of today's forecast rainfall has been subject to ongoing uncertainty over the past 24 hours with successive forecasts shifting the areas of heaviest, most persistent rain around, sometimes a little further to the south, most recently back a little northwards. Hence it has been a bit fraught gauging exactly where within the region the main risk would be. However, based on the very latest information to hand here is my current assessment of the areas most at risk from disruptive rainfall today. Although some initial rain is now affecting south Cheshire the main thrust of rain will come westwards across the region during the next couple of hours and then persist before exiting Merseyside and west Cheshire around mid to late afternoon. The northern limit of the main rain area is still very uncertain. Some rain, locally heavy, will cross Cumbria in the next few hours but beyond that the approximate northern limit looks like being across north Lancashire. Some additional rain will feed into Cumbria from NE England this afternoon and this evening, some of which could turn heavy, mainly in the eastern half of the county. However, as we head through this evening this rain will tend to shift northwards and out of the county and the risk of any significant disruption over Cumbria at least, now looks to be low. Elsewhere the highest rainfall totals now appear to be most likely over Cheshire, Merseyside, Greater Manchester and possibly east Lancashire. Within these counties the forecast continues to show considerable variation in rainfall totals over short distances so local detail will be unreliable but in general terms the largest rainfall totals seem most likely to be over the more southern parts of both Merseyside and Greater Manchester, along with all of Cheshire. This morning's Flood Guidance Statement (FGS) is being prepared early and should be available by around 0830. I will forward it to you just as soon as I see it. The initial risk of disruption will come initially from surface water excess with the river response following in due course. The severe weather warnings status will be reviewed in association with the FGS so that any updates should be posted by mid-morning.

Beyond today, purely weather-wise, the situation is a gradually improving one. Saturday should see a fair amount of dry weather. There may be a few showers developing by the afternoon, more especially across the south of the region, but in terms of additional rainfall, amounts should be small. Sunday, likewise, currently promises a fair amount of dry, bright weather, albeit with a few showers by the afternoon, again southern parts of the region most likely to see these. However, once we get today's event out of the way, the risk of any further disruptive rainfall across the region looks very low in the coming few days. This is going to be a very testing day no doubt, with the potential, as spelt out in successive FGSs for significant disruption from either surface water or river response. I will endeavour to keep you all fully up to date in terms of severe weather warnings status and FGSs etc. Please use the website radar or Hazard Manager to monitor the progression and development of the rainfall.

## Flood Guidance Statement 9:00hrs 06 July 2012

Our assessment of daily flood risk for England and Wales is below.



9:00 - 23:59hrs Friday 06 July 2012	00:00 - 23:59hrs Saturday 07 July 2012	00:00 - 23:59hrs Sunday 08 July 2012	00:00 - 23:59hrs Monday 09 July 2012	00:00 - 23:59hrs Tuesday 10 July 2012
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### Headline

**Potential for severe disruption due to river and surface water flooding impacts today into tomorrow in the areas highlighted AMBER on the maps.**

**Should the areas highlighted RED receive the worst of the rainfall then surface water and river flooding impacts will be SEVERE.**

### General Overview of Flood Risk

Heavy and persistent rain today (Friday) in parts of eastern, central and northern England along with central and north Wales, with a HIGH risk of river and surface water flooding in the south Pennines and north east Midlands. SEVERE impacts are expected if the worst of the rainfall is here.

Note that severe flooding impacts are also possible within the AMBER zone.

Please see the Specific Area of Concern map for further details.

On Saturday, further heavy rain will affect south west England and the far north east of England, with minor river or surface water flooding impacts possible. In addition, there may be residual river flooding in parts of northern England and the north Midlands.

On Sunday, heavy showers may give surface water flooding impacts in parts of south east and eastern England.

### **Precautionary Strategic Co-ordination Group Teleconference (LRF) – Friday 6<sup>th</sup> July 2012 at 9.30am**

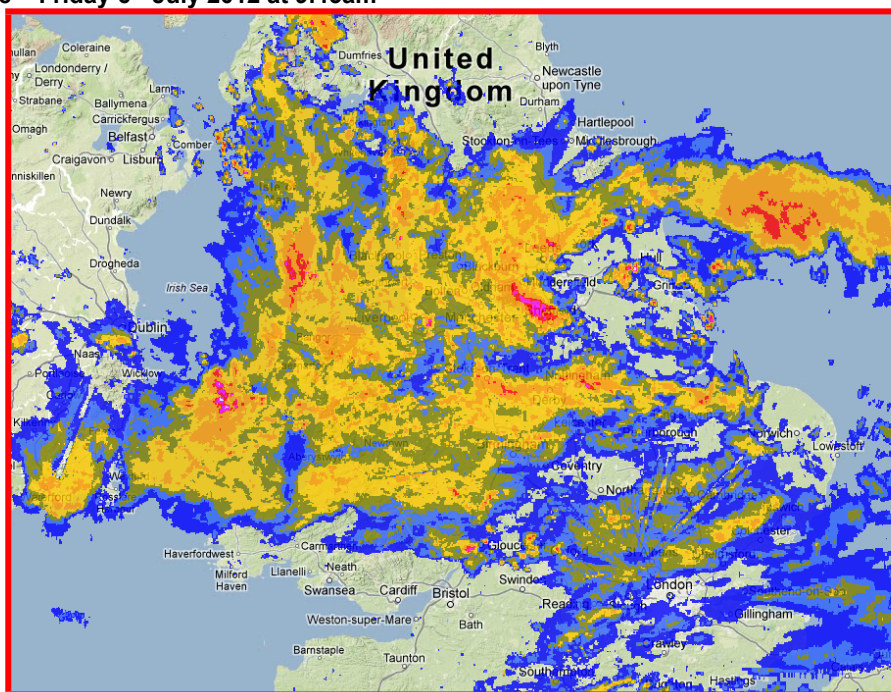
Attended by Stewart Mashiter on behalf of Blackburn with Darwen Borough Council.

- Weather summary from the Met Office for Lancashire for the next 4-6 hours (improving later this afternoon). The critical areas are identified as Blackburn with Darwen moving into Chorley and West Lancashire.
- Local Authority updates detailing a number of incidents of surface water flooding and some residential and commercial properties being flooded at Colne and Pendle.
- A flood warning has just been issued for River Darwen and it is anticipated that River Douglas will also go to warning later today.
- Reservoirs – update on Jacks Key no problems or issues.
- Eastern parts of county given priority for culvert maintenance by the Environment Agency.
- Blackburn with Darwen reported having issued 3,000 sandbags. Burnley requested mutual aid regarding sandbags from other local authorities.
- Network Rail reported business as usual although they are holding a meeting at 11am today.
- LFRS reporting no major flooding overnight. High volume pump on standby.
- NWAS reported no issues other than some RTC caused by surface flood water.

### **Flood Warning Issued for River Darwen, Area A – Friday 6<sup>th</sup> July 2012 at 9.36am**

A Flood Warning has been issued by the Environment Agency for the River Darwen at Darwen, Area A. Flooding is expected for Properties in the Hollins Grove area of Darwen off the Blackburn Road between Bright Street and Clarence Street today. Immediate action required. Flooding is expected to affect up to 203 properties in this area. Heavy rainfall has been forecast throughout today for the Darwen area. This rainfall is likely to be as intense as that seen on 22 June 2012 when homes were flooded. Heavy rainfall with intense bursts is expected this evening into tomorrow evening.

### **Rainfall Radar Image – Friday 6<sup>th</sup> July 2012 at 9.45am**



### **Environment Agency Lead Multi Agency Teleconference – Friday 6<sup>th</sup> July 2012 at 1pm**

Attended by Stewart Mashiter on behalf of Blackburn with Darwen Borough Council.

Met Office Advisor gave a summary of the forecast: Rain is well established. Forecast is that the rainfall for the afternoon will be fragmented and will vary in intensity over time and space. It will take most of the afternoon to clear up from the South, hopefully clearing by late afternoon. Still an ongoing risk of surface water flooding due to remaining heavy pockets of rain. Yellow warning still in force for Saturday, however hopefully not too much adverse weather for the weekend. No great totals expected for the weekend. Most concern for the next 4 hours. Environment Agency reported that Flood Alerts will remain in force for most of Lancashire until the rain clears (hopefully this evening). One Flood Warning in force for Darwen due to the on going issues in the area. The Warning will stay in force until the rain passes. No more Flood Warnings are forecast to be issued at this time. Teams are out on site and staff are clearing grids in Blackburn, Darwen and Formby. Dan Bond also added that EA staff are also out on site in areas that were affected by flooding on 22 June 2012. Blackburn with Darwen reported issues around Knott Street and Railway Street, people have been evacuated due to a blocked culvert and build up of water behind a retaining wall. Silver Command has been established at the Green Bank police station.



### Regional Met Office Advisor Update – Friday 6<sup>th</sup> July 2012 at 7.51am

The rain is now well-established across much of the region. Meanwhile the latest forecast guidance from Met Office Operations Centre has some minor changes to report from my earlier briefing.

1. Cumbria - The rain has been rather more extensive this morning, particularly across south Cumbria, and some further pulses of heavy rain are possible here over the next few hours. This evening, as the rain across Cumbria begins to edge northwards some of it could turn quite heavy, especially over the Carlisle and Eden domains and it could take all night for the rain to finally clear out of north Cumbria, hence the risk of surface water issues across the county can't be discounted until the end of tonight.

2. Remaining areas - the main uncertainty is now the timing of a proper clearance through the course of this afternoon. I have previously suggested mid-afternoon as a likely time for things to improve but the latest forecast suggests that the clearance timing could vary considerably across the region from north to south. Currently Cheshire looks like it could see the drier weather first and Lancashire last (probably later this afternoon) but, this being weather forecasting, timings remain subject to error and, as always, the radar rainfall imagery will provide the best clues as to when things will finally improve.

In terms of warnings etc. there are currently no changes in severe weather warnings status i.e. yesterday's Amber warning is still in force but is due to be updated in the next couple of hours. An updated Flood Guidance Statement is due out around 1200, Lancashire, Greater Manchester, Cheshire, Warrington and Halton, currently being on Red (High flood risk).

### Chief Forecasters Assessment – Friday 6<sup>th</sup> July 2012 at 11.35am

An area of low pressure will move westwards across southern Britain from the near continent today. As it does so it is drawing a plume of warm, moist air westwards across many parts of central Britain. This is bringing some very heavy and locally thundery rain, with totals of 20 to 40 mm quite widely, and locally 60 to 80 mm in places. The rain across central England and north Wales will gradually ease during the day. Although brighter conditions will follow, there is also a risk of slow moving heavy, thundery showers developing. These could lead to local torrential downpours giving 15-20 mm of rain within an hour. With the ground being near-saturated in many areas, these amounts of rain are likely to cause significant problems. It is possible that further adjustments will be made to the limits of the warning areas, so please check for updates.

## Flood Guidance Statement 12:00hrs 06 July 2012

Our assessment of daily flood risk for England and Wales is below.



12:00 - 23:59hrs Friday 06 July 2012	00:00 - 23:59hrs Saturday 07 July 2012	00:00 - 23:59hrs Sunday 08 July 2012	00:00 - 23:59hrs Monday 09 July 2012	00:00 - 23:59hrs Tuesday 10 July 2012
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### Headline

**Continued vigilance needed in both AMBER and RED areas identified today for both surface water and river flooding.**  
**Southwest England now identified as heightened flood risk for Saturday and is now AMBER.**

### General Overview of Flood Risk

Heavy and persistent rain will continue today (Friday) across parts of eastern, central and northern England along with central and north Wales, with a HIGH risk of river and surface water flooding in the south Pennines and north east Midlands. SEVERE impacts are expected if the worst of the rainfall is here.

Note that severe flooding impacts are also possible within the AMBER zone.

Please see the Specific Area of Concern map for further details.

Slow moving heavy showers will bring a risk of minor disruption from surface water flooding across southern England and south Wales through the rest of today too.

On Saturday, further persistent, heavy rain is likely to affect parts of southwest England with significant disruption possible from surface water flooding and in rapid response catchments during the day. Isolated, heavy showers are possible across much of the rest of England and Wales during Saturday bringing a low risk of surface water flooding. Further heavy rain will also affect the far northeast of England on Saturday with minor river or surface water flooding impacts possible.

In addition, there may be residual river flooding in parts of northern England and the north Midlands.

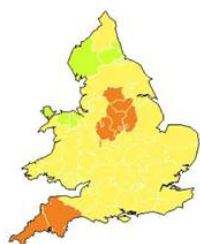
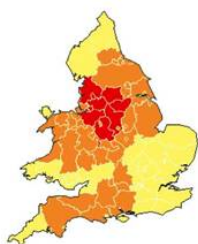
On Sunday, heavy showers may give surface water flooding impacts in parts of southeast and eastern England.

### Regional Met Office Advisor Update – Friday 6<sup>th</sup> July 2012 at 3.36pm

With luck, this event will not turn out as bad as I feared earlier it might (around the time this morning when the red Flood Guidance Statement came out). Still further pulses of rain to come across the region but much of the rain is in the 'light' or 'moderate' category with some notable drier slots having developed across Lancashire. Still hoping for a more general clearance (in rain, if not cloud) in the next three to four hours, except across Cumbria where the rain will, if anything, get more organised for a time this evening and overnight before eventually clearing away later tonight. As for tomorrow and Sunday, one or two sharp showers possible tomorrow afternoon and perhaps some further patchy rain tomorrow night. With the ground pretty sodden this has prompted the Met Office to issue a Yellow warning (attached above) covering all areas bar Cumbria, to be taken as something of a precautionary measure. Sunday currently looks half-reasonable with a few showers perhaps by the afternoon but also some dry, bright weather, especially over Cumbria. Looking rather cool and breezy early next week but although some rain, nothing disruptive on the horizon after today.

## Flood Guidance Statement 16:00hrs 06 July 2012

Our assessment of daily flood risk for England and Wales is below.



16:00 - 23:59hrs  
Friday  
06 July 2012

00:00 - 23:59hrs  
Saturday  
07 July 2012

00:00 - 23:59hrs  
Sunday  
08 July 2012

00:00 - 23:59hrs  
Monday  
09 July 2012

00:00 - 23:59hrs  
Tuesday  
10 July 2012

### Headline

**Continued vigilance needed in AMBER and RED areas of northern England and Wales today for both surface water and river flooding.**

**Parts of central-southern England and southwest England, shown as AMBER, seeing localised surface water flooding from torrential downpours into this evening.**

**Southwest England also identified as heightened flood risk for Saturday with a chance of some severe disruption.**

### General Overview of Flood Risk

Heavy and persistent rain today (Friday) across parts of eastern, central and northern England along with central and north Wales has brought widespread significant impacts already, with an on-going risk of severe flooding impacts from river and surface water flooding today. These areas are shown within the AMBER and RED zones in the northern half of England and Wales today.

Please see the Specific Area of Concern Map for further details.

Torrential downpours through the rest of this afternoon and into this evening bring a risk of significant disruption from surface water flooding across parts of central-southern and southwest England, coloured AMBER in the maps and also shown on the Specific Area of Concern map.

There is also a low risk of significant disruption across the rest of southern England and south Wales through the rest of today from torrential downpours too.

On Saturday, further persistent, heavy rain is likely to affect parts of southwest England with a low likelihood of severe disruption and a higher likelihood of significant disruption from surface water flooding and in rapid response catchments during the day.

Isolated, heavy showers are possible across much of the rest of England and Wales during Saturday bringing a low risk of surface water flooding.

Further heavy rain will also affect the far northeast of England on Saturday with minor river or surface water flooding impacts possible.

In addition, there may be residual river flooding in parts of northern England and the north Midlands.

On Sunday, heavy showers may give surface water flooding impacts in parts of southeast and eastern England.



## Flood Guidance Statement 18:30hrs 06 July 2012

Our assessment of daily flood risk for England and Wales is below.



18:30 - 23:59hrs  
Friday  
06 July 2012

00:00 - 23:59hrs  
Saturday  
07 July 2012

00:00 - 23:59hrs  
Sunday  
08 July 2012

00:00 - 23:59hrs  
Monday  
09 July 2012

00:00 - 23:59hrs  
Tuesday  
10 July 2012

### Headline

**Continued vigilance needed in AMBER and RED areas of northern England and Wales today for both surface water and river flooding.**

**Risk of SEVERE DISRUPTION in parts of southwest England on Saturday, especially across Devon and Cornwall from both surface water and river flooding.**

**Parts of central-southern England and southwest England, shown as AMBER, still at risk of seeing localised surface water flooding from torrential downpours this evening.**

### General Overview of Flood Risk

Heavy and persistent rain today (Friday) across parts of eastern, central and northern England along with central and north Wales has brought widespread significant impacts already, with an on-going risk of severe flooding impacts from river and surface water flooding today. These areas are shown within the AMBER and RED zones in the northern half of England and Wales today.

Please see the Specific Areas of Concern Map for further details.

The chance of isolated torrential downpours through the rest of this evening bring a risk of significant disruption from surface water flooding across parts of central-southern and southwest England, coloured AMBER in the maps and also shown on the Specific Area of Concern map.

There is also a low risk of significant disruption across the rest of southern England and south Wales through the rest of this evening from torrential downpours too.

On Saturday, further persistent, heavy rain is likely to affect parts of southwest England and this may be heavy enough to cause severe disruption from surface water flooding and river flooding, especially across southern parts of Devon and Cornwall up until mid-afternoon. Hence the HIGH flood risk in these areas for Saturday.

There is still a risk of severe disruption across Dorset, although that risk is slightly lower.

Please see the Specific Area of Concern Map for further details.

Isolated, heavy showers are possible across much of the rest of England and Wales during Saturday bringing a low risk of surface water flooding.

Further heavy rain will also affect the far northeast of England on Saturday with minor river or surface water flooding impacts possible.

In addition, there may be residual river flooding in parts of northern England and the north Midlands.

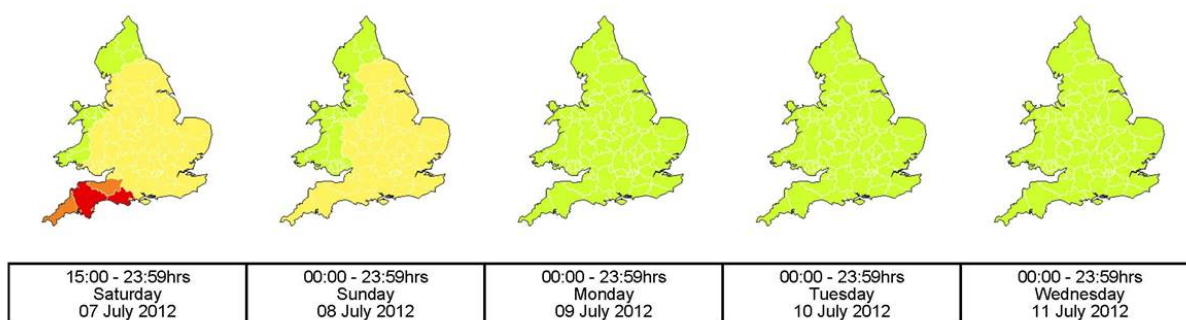
On Sunday, heavy showers may give surface water flooding impacts in parts of southeast and eastern England.

### Flood Warning Issued for River Darwen, Area A Removed– Friday 6<sup>th</sup> July 2012 at 7.22pm

The Flood Warning for the River Darwen at Darwen, Area A is no longer in force. The situation is improving. No further flooding is currently expected in this area. Flood Warnings and Alerts may still be in force for surrounding areas.

## Flood Guidance Statement 15:00hrs 07 July 2012

Our assessment of daily flood risk for England and Wales is below.



### Headline

River levels are now falling in west Devon however two severe flood warnings have been issued in Devon and one in Dorset. The flood risk is **HIGH** for Devon and Dorset as severe disruption is occurring there. The flood risk is **MEDIUM** for Cornwall and southern parts of Somerset.

Significant disruption remains possible across much of England and Wales from both surface water and river flooding.

### General Overview of Flood Risk

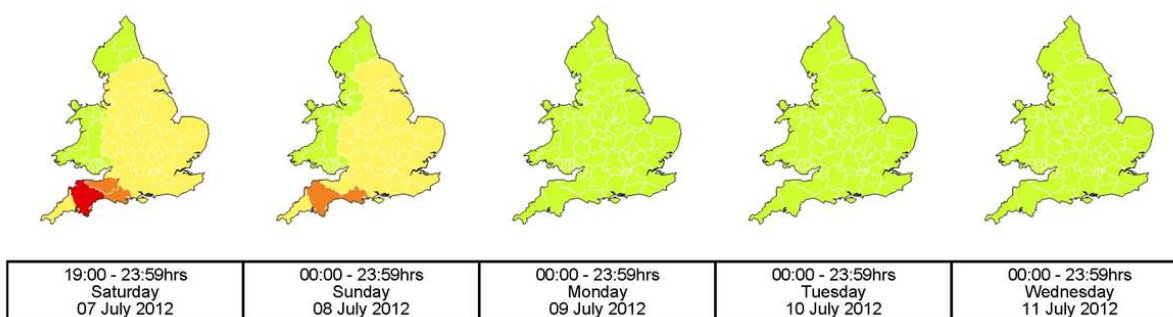
The heaviest rain has now cleared west Devon with only occasional showers to follow however rain is continuing to fall in east Devon, south Somerset and Dorset. Severe flood warnings have been issued for Devon and Dorset so the flood risk continues to be **HIGH** for Devon and is increased to **HIGH** for Dorset. The flood risk is maintained as **MEDIUM** for the far south of Somerset and Cornwall as rivers currently remain high. The rain continues to move eastwards and there remains a **MEDIUM** risk of surface water and river flooding in Bournemouth and Poole. Further east the river and surface water risk is **LOW**.

Only occasional showers are likely over the rest of England and Wales and with a continuing river response in parts of the Midlands and Yorkshire the overall flood risk is **LOW** for the areas highlighted yellow above today (Saturday).

On Sunday, there is again a **LOW** risk surface water flooding as heavy showers will affect parts of northern, central, southeastern and eastern England.

## Flood Guidance Statement 19:00hrs 07 July 2012

Our assessment of daily flood risk for England and Wales is below.



### Headline

A severe flood warning remains in force in parts of east Devon and the flood risk here is therefore **HIGH**.

### General Overview of Flood Risk

A severe flood warning remains in force in parts of east Devon and so the flood risk remains **HIGH**. River levels are now peaking and water levels will begin to fall and so the flood risk is reduced to **MEDIUM** tomorrow (Sunday). In Dorset the river flood risk has reduced to **MEDIUM** for the remainder of today (Saturday) and is maintained as **MEDIUM** for Sunday.

The flood risk is **LOW** for parts of southeast England this evening and overnight. Conditions across Kent, East Sussex, Essex and Suffolk are being closely monitored as rain over northern France is pulled northwards across these areas.

Elsewhere heavy showers will die out this evening but then reform again tomorrow (Sunday) with a **LOW** flood risk for both days over much of the rest of England.



## Flood Guidance Statement 10:30hrs 08 July 2012

Our assessment of daily flood risk for England and Wales is below.



10:30 - 23:59hrs Sunday 08 July 2012	00:00 - 23:59hrs Monday 09 July 2012	00:00 - 23:59hrs Tuesday 10 July 2012	00:00 - 23:59hrs Wednesday 11 July 2012	00:00 - 23:59hrs Thursday 12 July 2012
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### Headline

**LOW risk of surface water flooding in parts eastern, southern, central and northern England.**

**LOW risk of (residual) river flooding in parts of England following rainfall over recent days.**

**Potential to increase the flood risk during this week.**

### General Overview of Flood Risk

There is a LOW risk of surface water flooding in parts south East Anglia, south eastern, central and northern England. Heavy, and locally thundery showers today, becoming slow moving and organised, especially across South East England and East Anglia. The surface water flood risk is shaded yellow on the areas of concern map

LOW risk of (residual) river flooding in parts of England following rainfall over recent days. River levels have generally peak across much of Devon, Dorset, the Midlands and North East, but remain high in some areas. The river flood risk has been decreased to LOW in these areas, as it is also across parts of northern, central and other parts of southern England.

Unsettled conditions are expected to continue this week with the potential to increase the flood risk from Tuesday onwards.

### Regional Met Office Advisor Update – Sunday 8<sup>th</sup> July 2012 at 12.15pm

Just a precautionary heads-up to the possibility this afternoon and early this evening of a few lively showers which could align themselves up in a band and thus give one or two unfortunate locations enough rain to trigger some localised disruption from surface water excess (whilst a few miles away it stays bone dry). A Met Office Yellow warning is in force to cover this eventuality and today's Flood Guidance Statement has Cumbria, Lancashire and Greater Manchester on Yellow (low flood risk) for surface water-related impacts. I wish I could say the coming week was going to turn fine and warm but instead it will be staying unsettled and often on the cool side this week with further rain or showers at times although, apart from a low risk of disruption from heavy showers on Wednesday, there doesn't appear to be anything particularly nasty on the horizon.

## Flood Guidance Statement 10:30hrs 09 July 2012

Our assessment of daily flood risk for England and Wales is below.



10:30 - 23:59hrs Monday 09 July 2012	00:00 - 23:59hrs Tuesday 10 July 2012	00:00 - 23:59hrs Wednesday 11 July 2012	00:00 - 23:59hrs Thursday 12 July 2012	00:00 - 23:59hrs Friday 13 July 2012
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### Headline

**LOW risk of flooding across parts of England over the next five days.**

**There is the potential to escalate the flood risk through the week.**

### General Overview of Flood Risk

The river flood risk remains LOW in Bournemouth today as rivers are yet to reach their peak from the rainfall over the weekend. Isolated heavy showers are also expected across the southwest and northwest of England today, leading to a LOW risk of isolated surface water and river flooding in these areas.

The surface water flood risk is LOW on Tuesday through much of central and eastern England for heavy showers tonight and through tomorrow morning.

Further heavy rainfall and showers are expected from Wednesday to Friday, with a LOW risk of river and surface water flooding across much of England and Wales. This will be closely monitored with updates issued as necessary.