BRIEFING NOTE: FLOODING IN NORTHERN IRELAND

"The quantum of properties within the indicative flood plain in Northern Ireland is estimated at 63,000; and it is further estimated that approximately 50% of these are defended by flood defences."[1]

1 The August 2008 Flood – An overview

- On the 16th August 2008, record breaking rainfall volumes were recorded within 12 hours across many parts of Northern Ireland.

- The rainfall led to wide spread disruption across much of the province and resulted in damage to property and possessions, over 100 road closures, infrastructure failure and significant risk to public health. People have been forced from their properties; businesses have been affected; and many have been left to deal with the clean up operation that followed.

- Inter-urban flooding is caused by sewer and drainage systems being overwhelmed by sudden localised downpours. Many homes and roads were affected in Belfast and as urban flood water is invariably mixed with sewerage, this led to additional health concerns and increased damage to properties and possessions.

- The newly completed Broadway underpass flooded with 100m litres of water and motorists had to be rescued from vehicles. It is understood that the Clowney River overwhelmed a culvert it had been diverted through causing the underpass to flood. The Department for Regional Development has appointed independent consultants, Amey, to carry out an investigation into the circumstances surrounding the flooding. A final report is expected over the coming months.[2]

- Fluvial flooding can affect those living in close proximity to brooks, streams, rivers and lakes etc. It occurs when the water features cannot cope with the amount of water draining into them from the land. Many rural communities were affected by this and the Ulster Farmers Union reports that many farmers have incurred serious losses as crops have been washed away or are under several feet of water and live stock has been lost.[3]

- By the start of September 2008, more than 1,600 people had applied for an emergency funding payment of £1000 from their local authorities.[4]

[1] National Flood Risk Assessment for Northern Ireland, August 2007, pg v.
[2] Department for Regional Development stated at Committee for Regional Development, 19th August 08.
[3] Ulster Farmers Union, *UFU Press Assembly for Flood Help,* August 2008.
[4] Department for the Environment, Irish News, August 28, 2008, *1,621 Ask For Floods Money*.

- Belfast City Council received most applications (402); followed by Antrim (191); Lisburn (161); Ballymena (151); Down (146); Newtownabbey (141); Craigavon (105); Banbridge (95); and Castlereagh (81). Of these, 1,140 households have received cheques.[5]

- During the event, the resources of Rivers Agency, NI Fire and Rescue, Northern Ireland Water and Roads Service, were fully deployed. The performance of those on the ground is to be commended.

2 NI Weather Events

- Weather events in Northern Ireland over the past decade have provoked the question as to whether current planning and infrastructure arrangements are sufficient to provide defence against flooding.

- Table 1 below highlights some of the severe flooding events in Northern Ireland over the past decade.[6] Whilst this is not an exhaustive list, it demonstrates the nature of events and the subsequent impacts.

Table 1: Severe Flooding Events in Northern Ireland 1998-2008

Date	Description of Flooding Event
2008 August	Rainfall totals on the 16th August 2008, recorded between 80% and 100% of normal August average in one day, with some areas in 12 to 18 hours. (Rainfall volumes were typically between 40-65mm, Portglenone recorded 75mm)[7] The Met Office concluded that rainfall events of 16th August could be described as unusual or extraordinary but not as unheard of or unprecedented. What was particularly unusual was the widespread area that was affected and details of impacts are noted above. The flooding was exacerbated by the unusually wet weather preceding the event.[8]

[5] Department for the Environment and Irish News, *1,621 Ask For Floods Money*, August 28, 2008,
[6] Information sourced from Met Office in September 2008, SNIFFER report on Preparing for Climate Change in Northern Ireland, 2007 and Media Sources.
[7] Met Office, Analysis provided to Regional Development Committee, 19th August 2008.
[8] *Ibid.*

2007 June	Extremely heavy rainfall was experienced in localised areas of Northern Ireland, notably East Belfast and Omagh on 12th June 2007. (50mm fell in 2-4 hours)[9] The Met Office describes the event as 'abnormal' and storm water road gullies, drainage systems and watercourses were overwhelmed by the deluge of water.[10] Flooding resulted in damage to property and infrastructure and many people were left with considerable hardship. £5m was made available by the Executive for relief and over 1000 households received emergency payments of £1000.[11] Further flooding was experienced in other locations on the 15th June.
2005 Dec.	Residential areas on the Ormeau Road were flooded for the third time in 5 years. 160 properties were damaged and many properties were under 3-4 foot of water containing raw sewerage. A Water Service investigation confirmed that the flooding was a result of a combination of factors including pump failures and blocked sewers.[12] Water Service was required to make compensation payments of between £1,000 and £2,000 to a total of 42 properties. Community Care Grants/Crisis Loans totalling over £35,000 were also made available for local residents.[13]
2004 August	Heavy localised flooding occurred in parts of Northern Ireland caused by heavy thunderstorms. The flooding was the worst to occur in Londonderry in decades and resulted in damage to infrastructure, flooded buildings and trapped motorists. Insurance assessors predicted that the damage would run into millions of pounds.[14] The Department for Regional Development stated that it was a "freak incident" and that there was no negligence by the statutory agencies and therefore, no legal basis for any compensation payments.[15]
2002 June	Heavy localised flooding was experienced as a result of thunderstorms on the 21st June. Due to coincidence with high tide, low lying coastal areas in Carrickfergus and Whiteabbey suffered severe flooding. Local drainage systems were unable to cope with the amount of water and the flooding was exacerbated by water that ran off higher ground.[16]

[9] Ministerial Statement, *Recent Flooding Incidents,* Monday 18th June.
[10] *Ibid*.
[11] BBC News, *£1.1m is paid to NI flood victims*, 20th July 2008.
[12] DRD, News Release, *Minister to make compensation payments for Lower Ormeau Residents*, 13th December 2003.
[13] *Ibid*.
[14] BBC, *Flooding 'Clear Up' under way*, 19th August 2004.
[15] BBC, *No Compensation for Flood Victims*, 30th November 2004.
[16] Ministers Questions, *Flood Damage Compensation*, 7th October 2002.

1999 Sept.	Heavy rainfall caused the Three Mile Water to burst its banks close to Whiteabbey village. Extensive flooding resulted.[17]

3 Planning for Flooding and Climate Change

- For years, development has taken place on Northern Ireland's flood plains and increasing urbanisation and the resulting escalation of hard surface areas has hindered the effectiveness of natural drainage systems. Furthermore, human actions, such as illegal dumping, have also reduced the effectiveness of natural and manmade drainage systems and exacerbated the impacts of flooding.

- Whilst planning, building and infrastructure guidelines dictate national standards, questions have been asked as to whether these are effective for current and future weather event defense. Some would even question the rationale of initial development of these areas although it is important to remain realistic in the planning process.

- Sewerage systems in Northern Ireland are currently designed to cope with flooding events that occur up to, on average, a 1 in 30 year return period. This is an accepted industry design standard and during the period of heaviest rainfall in 2007 and 2008, the storm flow exceeded the design capacity of the network. It has been widely acknowledged that no sewerage system could cope with a storm event of this magnitude.[18]

- The Foresight *Future Flooding* project states that with regards to flood defense structures: *"the existing standards of protection for urban communities of between 1 and 50 years to 1 and 100 years could degrade to be between 1 in 15 years to 1 in 20 years, over the next 50 to 80 years".*[19] This implies that planning and building standards used today will not be sufficient to defend against flood risks in the future. It has even been suggested that today's standards are not sufficient to deal with today's flood risk.

- The SNIFFER, *Preparing for Climate Change in Northern Ireland* report states that Northern Ireland's climate is already changing and that we should expect these changes to accelerate over the coming century.[20] It outlines threats such as increases in winter fluvial, flash and coastal flooding and the associated detrimental impacts on urban infrastructure; buildings; utilities and transport; businesses; the economy; and health. A series of recommendations set out the need for more specific modelling of the impacts of flood risk; strategic action in developing appropriate building and planning guidelines; and a review of current standards for infrastructure such as drainage, earthworks, roads, railways, bridges, sea defenses and tunnels in anticipation of climate change.[21]

[17] SNIFFER, *Preparing for Climate Change in Northern Ireland*, Final Report, January 2007.
[18] Ministerial Statement, *Recent Flooding Incidents,* Monday 18th June 2008.
[19] HR Wallingford, *National Flood Risk Assessment for Northern Ireland, Flood Mapping Strategy (Interim Report), Executive Summary,* July 2007, pg v.
[20] SNIFFER, *Preparing for Climate Change in Northern Ireland, Final Report,* January 2007, pg 2.
[21] *Ibid*.

- The DoE's River Agency has commissioned *The National Flood Risk Assessment for Northern Ireland*.[22] The aims of this assessment are to increase public awareness about flood risk; show differentiated spatial distribution of flood risk throughout the region; and support public asset management plans. An interim report has been prepared which outlined indicative flood plain risk within Northern Ireland and further mapping exercises will continue over the coming 3 years. This information will undoubtedly provide a much needed resource in Northern Ireland's flood defense tools as the mapping will allow for more informed planning policy and development control.

4 Have Lessons Been Learnt in the UK and Northern Ireland?

- Following the summer floods in the UK in 2007, a major national review was undertaken by Sir Michael Pitt. Sir Michael concluded that:

> ***Research published as part of my report today shows that the risk of flooding continues to escalate; making the events that shattered so many communities an ever increasing threat. I urge the Government to show leadership and urgently set out the process and timescale for improving resilience in the UK…Waiting for another serious event is a dangerous 'strategy of luck'; we need to act now to protect our future.[23]***

- Sir Michael called for urgent and fundamental changes to the way the country is adapting to the increased risk of flooding and called on the Government to set out publicly how it will make rapid progress, and be held to account, on improving the country's flood resilience. In terms of progress in Northern Ireland, whilst a revised emergency planning system was implemented during the August 2008 flooding events, it had certainly not been set out publicly, and on the ground, emergency planning effectiveness and co-ordination was brought into serious question.

- A single emergency number is planned for Northern Ireland and a private sector partner has been appointed to provide the service. Delivery is expected in October 2008.

- Sir Michael also highlighted concerns about the quality and availability of flood risk information available to emergency responders and the public.

> ***"We need to be more willing to tell people the truth about risk. The current lack of clarity and transparency has the potential to put not only people's homes, but lives in jeopardy.[24]***

---

[22] HR Wallingford, *National Flood Risk Assessment for Northern Ireland, Flood Mapping Strategy (Interim Report), Executive Summary,* July 2007.
[23] Sir Michael Pitt, Press Release, Sir Michael Pitt Publishes Final Report, 25th June 2008. [23] Ministerial Statement, *Recent Flooding Incidents,* Monday 18th June 2008.
[23] HR Wallingford, *National Flood Risk Assessment for Northern Ireland, Flood Mapping Strategy (Interim Report), Executive Summary,* July 2007, pg v.
[23] SNIFFER, *Preparing for Climate Change in Northern Ireland, Final Report,* January 2007, pg 2.
[23] *Ibid*.
[23] HR Wallingford, *National Flood Risk Assessment for Northern Ireland, Flood Mapping Strategy (Interim Report), Executive Summary,* July 2007.
[23] Sir Michael Pitt, Press Release, Sir Michael Pitt Publishes Final Report, 25th June 2008.
[24]Ibid.

- This is undoubtedly of major concern for the people of Northern Ireland. Only recently have the first set of findings on the Flood Risk Assessment for Northern Ireland been reported. Further information surrounding the distribution of risk may not be available for another 3 years. Recent media coverage has stated that "hundreds of people given planning permission for their houses may not have been told they were at risk of flooding" and it has been reported that "it has been left to the individual to obtain such information"[25]. Given that this information is not yet available, there is a lack of clarity of risks for the individual.

- The total financial cost of flooding is difficult to ascertain after any flooding event. Insurance companies reported UK losses of around £3bn with around 165,000 claims being received after the 2007 floods. The full economic and social cost, however, is likely to be many times higher. The Pitt report notes that:

  "failure to address issues now can result in greater financial costs in the long term" *furthermore, "****For every £1 further we can spend, we would be able to save the country £6 in repair costs".***[26]

- The Pitt Report provides a series of recommendations and it is now up to the Government to consider these and respond. Four principles guided the review and must underpin any further discussion on flooding in Northern Ireland.

  1) Most importantly, the needs of those individuals and communities who have suffered or who are at risk must be considered; 2)Change will only happen with strong and more effective leadership across the board; 3) We must be clearer about who does what; and 4) We must be willing to work together and share information. [27]

[25] Ibid.
[26] Sir Michael Pitt, Learning Lessons from the 2007 Floods – Final Report, June 2008.
[27] Sir Michael Pitt, Learning Lessons from the 2007 Floods – Final Report, June 2008, pg x.