Leeds CITY COUNCIL

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Report of the Director of City Development / Director of Resources

Executive Board

Date: 4 July 2007

Subject: Impact of Flooding Events in June on the Leeds District

Electoral wards affected:	**Specific implications for:**
	Ethnic minorities ☐
	Women ☐
	Disabled people ☐
	Narrowing the gap ☐

Eligible for call In ☐ Not eligible for call in (details contained in the report) ☐

Executive Summary

1. A series of severe weather events in June have given rise to a large number of flooding incidents across Leeds and Yorkshire caused by unprecedented rainfall levels, which the natural and built environments have been unable to cope with.
2. The Council has responded well to this challenge, although a number of residents find themselves out of their homes for some time. We now need to meet urgently with our professional partners to establish what lessons can be learned and to push for flood defence schemes to be implemented in key locations.
3. Following this analysis, there will need to be further consideration of how the Council and its partners need to respond to the challenges to its area and the lives of its citizens being posed by climatic change and related phenomena.

1.0 Purpose of this report

1.1 This report outlines the impact of a number of significant flooding incidents between 15 and 25 June 2007 which affected areas across the whole of Leeds district. It highlights the nature of this flooding and our initial understanding of its causes, and makes some preliminary suggestions on how the Council and its partners might seek to respond to these events.

2.0 Background information

2.1 Every year Leeds experiences a number of flooding incidents from causes which can significantly impact the lives of residents for a prolonged period. These incidents may arise from a variety of sources, but it has been noted that a growing number of these derive from *non-main river* sources, such as becks, sewers, highway gullies and drains as well as surface water run-off. In response to several factors (including climate change), the frequency and intensity of flooding in Leeds and elsewhere appears to be increasing and Met Office weather forecasters are now stating that we should expect these types of events to occur on a regular basis.

2.2 The city has already had a foretaste of these changing conditions. In August 2004 and May 2005 several areas of the city, predominantly in East Leeds, experienced significant flooding due to an unusually intense rainfall and the inability of the drainage infrastructure to cope with the increased volumes of water. Although the weather giving rise to the flooding was extreme, the incidents did highlight several key shortcomings relating to: (i) the resources available to maintain our assets and respond to floods; (ii) key players' understanding of their responsibilities relating to water; and (iii) the level of co-operation between agencies with responsibilities for water maintenance and enforcement.

2.3 In response to these shortcomings, a cross-departmental Water Asset Management Working Group was set-up and developed a range of costed recommendations to address a range of problems and issues relating to the maintenance of the Council's water assets (watercourses, culverts, highways gullies, reservoirs and lakes) and the way in which it responds to flooding incidents. An additional, recurring resource of £1.1m was provided to relevant services to fund an enhanced service provision as well as to continue the development of other recommendations.

2.4 A report is attached at Appendix 1 ('A New Departure: The Council's Response to the Lessons Learned from Major Flooding in 2004 and 2005') which highlights the significant progress we have made in developing and implementing these recommendations. However, although we believe the changes made have reduced flood risk overall and enabled a better emergency response, this report makes clear that this work will not eliminate (new) flooding from extraordinary rainfall impacting our communities. More effective flood defences and mitigation will require significant on-going work and investment on the part of key agencies at the local, regional and national levels in partnership.

3.0 Main issues

3.1 The recent flooding experienced by residents in Leeds is the culmination of severe rainfall over a period rather than the consequence of a single event. This period arguably began with the intense rainfall (measured at over 100mm at Farnley Hall rain gauge) falling over the 48 hour period between 14 - 15 June. This gave rise to widespread flooding across the city (see map at Appendix 2), including incidents at Northern Street (city centre), Wortley (Outer Ring Road, Branch Road, Pudsey Road), Guiseley (Victoria Road), Swillington (Neville Grove), Beeston (Southleighs), Pudsey (Chaucer Avenue), Howden Clough (Howley Mill Lane), Methley (A639 Methley Lane) and Otley (A660). It is clear that this downpour contributed to the ground becoming saturated and set the scene for the flooding incidents which occurred 10 days later.

3.2 The second bout of intense rainfall, which fell during a violent lightning storm on the night of 19th-20th June, closed train services to London and Harrogate and caused flooding in the city centre (Northern Street), Halton (gardens of Dunhills), Pudsey (properties in Turkey Hill), and Methley (Newmarket Lane).

3.3 The most serious flooding then took place on Monday, 25 June 2005 and affected most of the whole of the Leeds district (see map at Appendix 3) rather than in a limited number of disparate locations as is more commonly the case. This attests to the unprecedented nature of the rainfall: according to preliminary data, northern England has just experienced its wettest June since records began. In June 1980 an average of 121.2mm of rain fell over the month compared to over 153mm this June in northern England, with around 100mm falling in the 24 hour period covering Monday. This would help to explain why the vast majority of locations – whether houses, businesses or roads - were flooded by surface water run-off or a surcharging of the drainage systems highlighting an inability of the ground or the drainage infrastructure to absorb the extreme volumes of water. There were, however, notable examples of watercourses overtopping their banks to cause major damage.

3.4 It is of no surprise then that, whilst some of these affected areas previously experienced severe flooding in August 2004 and May 2005 and yet others are known to have on-going flooding problems, some locations appear to have experienced flooding for the first time on 25 June. This report will now highlight the known areas affected and the sources of the flooding as far as this is understood.

Flooding from Rivers and Becks

3.5 The main locations where flooding of domestic properties occurred from watercourses overtopping their banks were:

- Halton (Dunhills, Veritys, Whitebridges): approximately 50+ houses affected by flooding from the beck for the third time in five years. The Wyke Beck is now classified as a 'main river' and has been overseen by the Environment Agency since April 2006.
- Collingham (Mill Beck Green): approximately 30 domestic properties flooded by the Collingham Beck which managed to circumvent an existing flood defence bund at No. 4 Lowcroft.
- Wortley: a number of properties flooded from the Wortley Beck at Wortley (Ring Road, Branch Avenue, Pudsey Road).
- Rothwell: a wide swathe of Springhead Park adjacent Gillett Lane flooded by River Dolphin inundating the depot to 4' and the aviary causing the death of 80 birds.
- Meanwood: the Meanwood Beck overtopped its banks to flood a Millside Nursing Home, a number of residential properties at Monkbridge Terrace and Mill Pond Close, businesses at Meanwood Close as well as Meanwood Valley Farm.
- Mabgate: the Sheepscar Beck overtopped and inundated businesses in the Mushroom Street area to around 4 feet.
- Kippax: around twelve houses in Ramsden Street flooded by an unnamed watercourse.

3.6 Possibly our biggest concern on 25 June was the risk that the River Aire would breach its banks along Kirkstall Road, throughout the City Centre and further downstream at Mickletown which could have caused widespread and long-term damage to both homes and businesses as has happened in South Yorkshire. The Aire appeared to be running at higher levels than experienced in October 2000 and August 2002 and did cause flooding of a limited number of roads and properties in the Waterfront/Calls, Dock Street and East Street/Neptune Street areas of the city centre.

Surface Water Flooding and Drainage Surcharging

3.7 Flooding from surface water run-off and surcharged drains affected hundreds of domestic and business properties to one degree or another in areas across the city that are too numerous to detail. By way of example, around a dozen or more properties in the Barley Hill Road, Derwent Drive, and Queensway areas of West Garforth were inundated in places to around 4 feet of water'.

3.8 Thus far, we are aware of a limited number of schools which were affected by flooding or had to be closed. Amongst the primary schools affected were: Ashfield PS (Otley); Beechwood PS (Seacroft); Garforth Green Lane PS; Parklands PS (Seacroft); Mount St. Mary's PS (Richmond Hill); Carlton PS (Carlton WF3); Grimes Dyke PS (Stanks); West End PS (Horsforth); and St Nicholas' RC School (Gipton). High schools affected include: Garforth Community College; Royds HS (Oulton); Corpus Christi RC HS (Halton Moor). Green Meadows North-west SILC.

3.9 In addition to this significant impact on properties, the flooding caused chaos to the city's transport infrastructure. Services from Leeds City Station were cancelled on most lines for most of the day and passengers had to make do with replacement bus services, although train services were restored for many of these destinations on a limited basis with the exception of those serving South Yorkshire for which there are still problems. The roads were also hit hard and the following major roads were closed or under water: Outer Ring Road at Wortley; A62 Gelderd Road; A65/A660 at Otley; and A659 Pool Road.

Actions Undertaken by the Council

3.10 It is our view that, whilst the scale of the actual downpour and its impact could not have been predicted, the Council did respond well to incidents that we were made aware of. It is, however, possible that we were not informed about certain incidents either by the public or our partners. Where we were made aware, the Council was able to respond preemptively and reactively to evolving events to address the community's and city's needs:

- Sandbags: officers from Highways began filling and deploying large volumes of sandbags to a range of locations preemptively from Sunday 24 June and reactively throughout Monday 25 June and days following this in anticipation of further incidents. The EA also delivered large quantities of sandbags to the Dunhills on Monday afternoon after the flood had occurred and high water levels persisted. The Council also deployed over 400 air brick covers and 50 flood boards to vulnerable locations.
- Deployment of incident co-ordination staff: the new Emergency Co-ordination Vehicle was deployed to great effect at the Dunhills, but this was but one of many locations where this could have been used. Area Management Teams were able to assist in identifying needs in other areas, including Halton and Collingham, and this approach can be developed further.
- Watercourse maintenance: Land Drainage officers visited at-risk sites throughout the city throughout the week to ensure preventative and reactive maintenance work was undertaken by our contractors at identified problem sites (some of which are the EA's responsibility).
- Structural safety: officers from Building Control and Bridges section assessed the safety of buildings and bridges across the city to ensure these were structurally sound.
- Street cleansing: the 6 gully cleansing vehicles were deployed across the city to assist in the cleaning down of properties and pumping of gullies following flooding and where it was feared that there might be a recurrence.
- Area management: officers from area management played an important role in providing reassurance and co-ordinating the distribution of large numbers of sandbags and skips (to enable the disposal of damaged household effects) to residents at the Dunhills and Collingham.

- Environmental Health advice: officers were deployed to all areas reported as having experienced flooding to distribute leaflets and give advice on the dangers of flood water and on how to clean-up after this subsides.
- Rest centres: a rest centre was set-up at Fearnville Leisure Centre in Gipton for residents of the Dunhills and other locations choosing to leave their homes to be sheltered and fed. A rest centre was also set-up at Leeds Town Hall for use by commuters stranded in the city centre due to transport problems, although this was able to close late on Monday evening due to lack of need.

Potential Next Steps

3.11 Given the unprecedented scale of the downpour and the large of number of incidents across the city, it is vital that any actions to be taken by the Council and its partners are informed by rigorous analysis and options appraisals. In light of this, it remains too early to provide detailed lessons learned and actions plans which can be agreed by members and senior officers at this stage.

3.12 However, we would suggest the following actions which should be acted upon urgently:

- firstly, material and welfare support and guidance should continue to be offered to those already affected by flooding;
- secondly, Council officers from responding departments should meet at the earliest opportunity for a debrief in order to compare experiences and identify lessons learned. Key concerns should be whether existing service provisions are adequate to cope with both existing and anticipated increases in demand.
- thirdly, officers from PEPU and Land Drainage should meet their peers from partner agencies in the emergency services, Environment Agency, and Yorkshire Water to consider what went well and where we need to learn lessons. This should focus on whether the EA provided as much information and alerting as they ought to have done and whether recently enmained watercourses like the Wyke Beck and Collingham Beck are sufficiently high in the priorities of the Agency.
- fourthly, information from the above should be used to review the Stage 2 Action Plan of WAMWG and determine whether any additional work needs to be added to this or if any additional resourcing is needed. A key consideration here will be the potential need for there to be a more dedicated, formal structure in place to oversee the strategic development of initiatives in this area rather than this being an adjunct to existing posts.
- fifthly, pressure needs to be brought to bear upon the Environment Agency urgently to ensure that flood defences commensurate with identified flood risks are developed and put in place on the River Aire from Kirkstall to Knowsthorpe, and along other 'main rivers in the city, including the Wyke Beck, Wortley Beck at Wortley, and Collingham Beck at Mill Beck Green, Collingham. As members are already aware, the Council was working with the EA to develop a major flood defence scheme for the city centre costing more than £100m, but this was deferred by the EA in their latest capital programme. These schemes should be addressed on 13 July when the Leader is meeting the Chief Executive of the EA, Barbara Young, along with representatives of Land Drainage and emergency planning.
- sixthly, given that any initiatives by the EA are likely to take time to be developed and agreed, the Council and the EA should discuss actions which they might jointly or severally undertake to reduce or mitigate the flood risk in the interim (e.g. provide all households with floodguards).
- seventhly, that the risk of flooding is fully taken account of in all new proposed developments in conjunction with the city-wide Strategic Flood Risk Assessment to be completed shortly.

4.0 Implications for Council Policy and Governance

4.1 In May 2006 Executive Board approved a policy statement on 'Maintaining Water Resources and Responding to Flood Incidents' which clarified the scope of the Council's roles and responsibilities in terms of its:

- statutory duties and permissive powers in relation to maintaining water resources;
- assessing and mitigating the risks arising;
- responding to related flooding incidents;
- and supporting the communities affected by these.

4.2 It is considered that this policy provides an adequate and robust framework to enable Council services to undertake their responsibilities, but this document will be reviewed as part of the lessons learned process.

5.0 Legal and resource implications

5.1 Resource issues will be addressed as part of the lessons learned review process and reported back to senior management and Executive Board in due course.

6.0 Conclusions

6.1 A series of extreme severe weather events have given rise to unprecedented levels of rainfall for June across Leeds and Yorkshire. The rain occurred to such an extent that both the natural and built environments were unable to cope with the volumes of water generated and flooding occurred in areas across the whole of the city. Whilst the impact on communities has been heavy, Leeds has been extremely lucky not to have experienced the degree of hardship faced by residents and businesses in South Yorkshire and the Council has responded well in the circumstances. To be clear, this flooding is not the result of failures by the Council or its partners and recent increases in resources and improvements by the Council, though unable to prevent this, undoubtedly mitigated the effects and enabled an improved response.

6.2 Weather forecasters are now suggesting that we should now expect this unpredictable type of weather to become the norm and the Council and its partners will have to work more closely together to identify how the worst effects of climate change can be mitigated to lessen the impact on citizens. However, this is something which requires action at the national and global levels rather than merely at a local level and this degree of challenge will necessitate significant changes in land use and the level of investment currently deployed by the Council and its partners in this area.

7.0 Recommendations

7.1 Executive Board is requested to note the comments contained within this report and endorse the preliminary actions proposed.