Report and recommendations relating to the Severe Flood Event in Selly Park South on 6th September 2008

Compiled for Selly Park South Neighbourhood Forum, Birmingham City Council and the Environment Agency by John Clayton, B.Ed Geography (Birmingham University), FRGS, Assoc F.RMetS. Specialist areas: Meteorology, Hydrology and Fluvial Processes. Currently working for the Royal Meteorological Society. Report approved by John Williams (Chair) & Jeanne Glenn (Secretary) on behalf of Selly Park South Neighbourhood Forum and published 16th September 2008

The Flood Event:

On the afternoon of Saturday 6th September 2008 a period of high intensity rainfall resulted in water from the River Rea flooding roads and properties in Selly Park South, Birmingham 29. The number of properties flooded is estimated at approximately 70. This is the first time that such a flood has occurred since 1927. The rise in the floodwater was rapid but steady once the downpour of rain started around 13:00BST. The rate of rise slowed from approx 15:00BST and the peak was reached by 16:00BST. The water gradually began to subside during the next hour and subsided more rapidly from 17:00BST onwards. The heaviest of the rain was over by 15:00BST after which rainfall became moderate then light.

Dogpool Lane at 15:37BST

Fashoda Road at 17:19BST

Background:

I operate my own weather station in Selly Park which has yielded the following data: Rainfall during the day on 06.09.2008 was 46.0mm. The previous day it was 34.0mm. In the previous 6 days it was 86.6mm. For comparison in a flood in 2007 which did not affect properties, rainfall on 14.06.2007 was 91.5mm. Rainfall the previous day was only 11.8mm and over the previous 13 days was only 4.3m. A few weeks later, rainfall on 20.07.2007 was 55.0mm. The previous day it was only 6.0mm. In the previous 5 days it was only 22.8mm. Again, properties were not flooded.

The contrast is clear. Before the 46mm fell on Saturday 06.09.2008 the ground was already totally saturated by many days of high rainfall. There were already pools of water lying on the surface of the playing fields and the river was full to the top of its natural channel. So all of the rain that fell on Saturday simply flowed straight to the river and overtopped the banks immediately. On the two high rainfall occasions quoted in 2007 the ground was relatively

dry, so much of the rainfall soaked in rather than running off to the river and even when flooding did occur the flood plain was not saturated so could absorb floodwater.

The rainfall on 06.09.2008 was also particularly intense with rates in excess of 64mm/hour being indicated on rainfall radar in the Rea catchment in the area of, and to the south of Selly Park.

Enquiries to the Environment Agency show that whereas the mean discharge of the Rea at Calthorpe Park gauge is 0.78 cubic metres per second (cumecs), on 06.09.2008 in the hours prior to the flood the river was flowing at approx 6 cumecs and the flow peaked at 72 cumecs at 15:30BST. Calthorpe gauge is of course downstream of the confluence of the Rea and Bourn Brook and so was also measuring the input from this major tributary and in turn its tributary the Chad Brook (see Map 1at end of report). However, as this was the highest peak recorded at this gauge since constant gauging began in 1972, it is indicative of the exceptional volume of this flood. It should be noted, though, that a peak of 67.9 cumecs was recorded on 26.09.98 and 65.6 cumecs on 02.06.1999 and that since constant gauging records began there has been a trend of increasingly high peaks.

Elderly residents who have lived in Selly Park South all their lives could not recall our streets being flooded. Research carried out by River Rea expert Harry Reeves shows that the last time such a flood occurred was in the early hours of Tuesday 12th July 1927 following violent rain storms during the afternoon and evening of the preceding day. It seems that this flood was much more severe than even the one we experienced on 06.09.2008. Since then channel improvements and flood defences have kept our neighbourhood safe from flooding. Until now.

The route of the flooding:

See Map 2 (at end of report)

From my own observations and from those of other people who witnessed the flood on Saturday it is evident that the flood water in the Rea upstream (to the south) of Dogpool Bridge overflowed the western bank to the south of Leake's factory and made its way around these buildings over the open flood plain land below the raised area of the new St Andrew's Hospital construction site. It then flowed out via Leake's yard and car park onto Dogpool Lane. This has been confirmed by members of Leake's management & staff who were called to the factory on Saturday afternoon when their alarm systems were triggered by floodwater entering some of their factory buildings. These people described the floodwater as alarmingly fast flowing. This floodwater (as well as direct surface run-off) flooded Dogpool Lane between Cecil Road and Manilla Road and overspilled firstly into Fashoda Rd and then into Cecil Road as the level rose. The houses in the southern sections of both of these roads consequently were flooded because they are the lowest lying and/or have only low door steps. Worst affected were the houses on the eastern side of Fashoda Road (odd numbers) and the western side of Cecil Road (even numbers).The water flowed from the Fashoda Rd houses and gardens into the backs of the Cecil Road houses, so they were being flooded from both directions. From what the residents of the Cecil Road properties report it seems that this flooding from the rear was probably more damaging than the influx of water from the front. As the water level continued to rise the

flow of water along Cecil Road became continuous, threatening more properties and the flow from Fashoda Rd extended down Hobson Rd to join the Cecil Road flow.

My own house, No 11 Cecil Rd, narrowly escaped along with those of all of my neighbours. We made improvised defences with bags of builders' sand, black bags filled with soil and flood boards across the front gates. My front door step is 25cm and the flood water came as high as 15cm against it. Matters were made worse by traffic from Moor Green Lane using Cecil Road as a diversion to get around Dogpool Lane, which had become impassable. The movement of vehicles through the floodwater created bow-waves which then lapped up against the front of our houses. Dogpool Lane was eventually closed by the Fire Service at the bridge & at Manilla Road. Physical closure by the Police was needed very much earlier.

Kitchener Road below Fashoda Rd to just below Cecil Road was flooded due to the flow from Cecil Rd and also direct surface runoff and again here houses were flooded. The flow discharged via the pathway to the playing fields / flood plain, ripping out a channel in the pathway max 70cm wide & 20cm deep. Ironically the bottom of Kitchener Rd, closest to the river, is slightly raised and therefore escaped as an isolated "island". The riverbank flood bund at the back of Cecil Rd east side successfully defended the majority of the properties from that direction, but I understand that flood water did get behind it at the southern end and so the houses at the southern end of Cecil Rd were flooded via their back gardens as well as via the road.

During the peak of the flood which lasted for a couple of hours the channel below Dogpool Bridge was at full capacity with the floodwater above the top of the bridge arch and not far short from overspilling onto the road. Presumably the reason the water rose no further up the bridge was because it was taking the diversionary route to the west instead, as described above. The drains in Dogpool Lane and the southern ends of Fashoda Rd and Cecil Rd were completely incapable of dealing with the large volume of flood water and surface run-off involved.

Photographs:

I took photographs of the floods as they happened on Saturday. John Williams, Chair of Selly Park South Forum, took photographs on Mon 8 Sep from Dogpool Lane to upstream of the bridge, showing evidence left by the floodwater and the route it followed. The photographs can be seen at this link:

http://www.flickr.com/photos/jcweatherman/sets/72157607289113279/

The Cadbury rumour:

In the days after the flood an unsubstantiated rumour started circulating in the neighbourhood that Cadburys had "opened sluice gates on The Bourne" where it flows through their factory site, the rumour implying that the Cadburys had made the flooding in Selly Park South worse.

Having witnessed the entire flood event myself and having talked with other witnesses there is no evidence that any such release of water caused a surge on the Rea during the afternoon. The flood hydrograph for Calthorpe gauge shows a classic natural pattern for a

flood of this nature with no unusual “spikes” which might indicate a sudden significant release of additional water. The Bourne certainly added a substantial amount of water to the flooded Rea at the Stirchley confluence but this would have occurred irrespective of any action taken by Cadburys. Cadburys subsequently denied to the BBC making such a release of water. I can find no evidence to support the rumour or the implied accusation that such an action influenced the flood.

Action required to prevent flooding of properties in Dogpool Lane, Fashoda Road, Cecil Road, Hobson Road and Kitchener Road in future:

1. Construct flood protection bund on the western side of the Rea from Dogpool Lane to Cartland Road to prevent the floodwater from taking the diversion it followed on 06.09.2008.
2. Reconstruct Dogpool Bridge to increase the arch span to allow flood discharges similar to those of 06.09.2008 to flow through without obstruction.
3. Minor improvements to the flood defences at the southern end of the bund which protects the rear service road and the houses on the eastern side of Cecil Road.

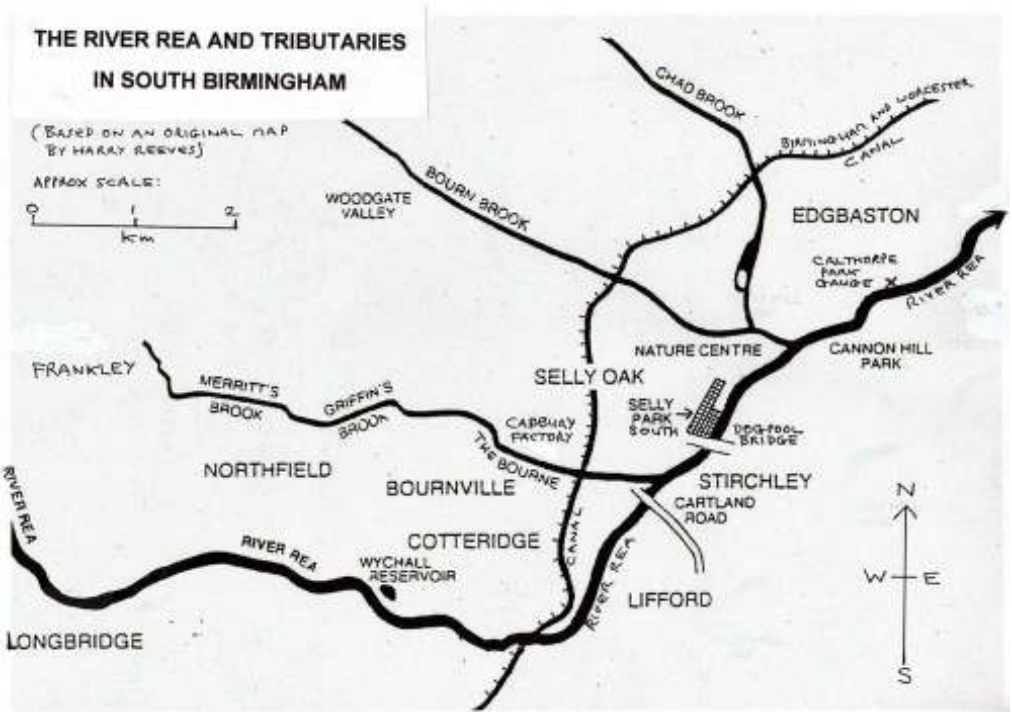
In the interim period:

4. Encourage residents to install their own low level flood defence measures (sandbags, stop boards and measures to block air bricks). Support them in taking this action.
5. Urge residents to register with the Environment Agency’s ‘Flood Warnings Direct’ automated telephone/text/fax system. This can be done by calling the Environment Agency’s dedicated number on 0845 988 1188. More information on this service and how to help protect from flooding can be found on the Environment Agency’s website: http://www.environment-agency.gov.uk/subjects/flood/
6. Protect the electricity substation outside St Andrews House, Dogpool Lane. Floodwater entered the substation but on this occasion did not rise high enough to put it out of action.
7. Ensure a police presence and close Dogpool Lane and the other flood affected roads to through traffic early on during any severe flood event to prevent through traffic from making matters worse.
8. Improve the City Council’s emergency response <u>during</u> a severe flood event. All of the response from Birmingham City Council on this occasion has come <u>after</u> the event.

Dogpool Bridge at 17:05BST

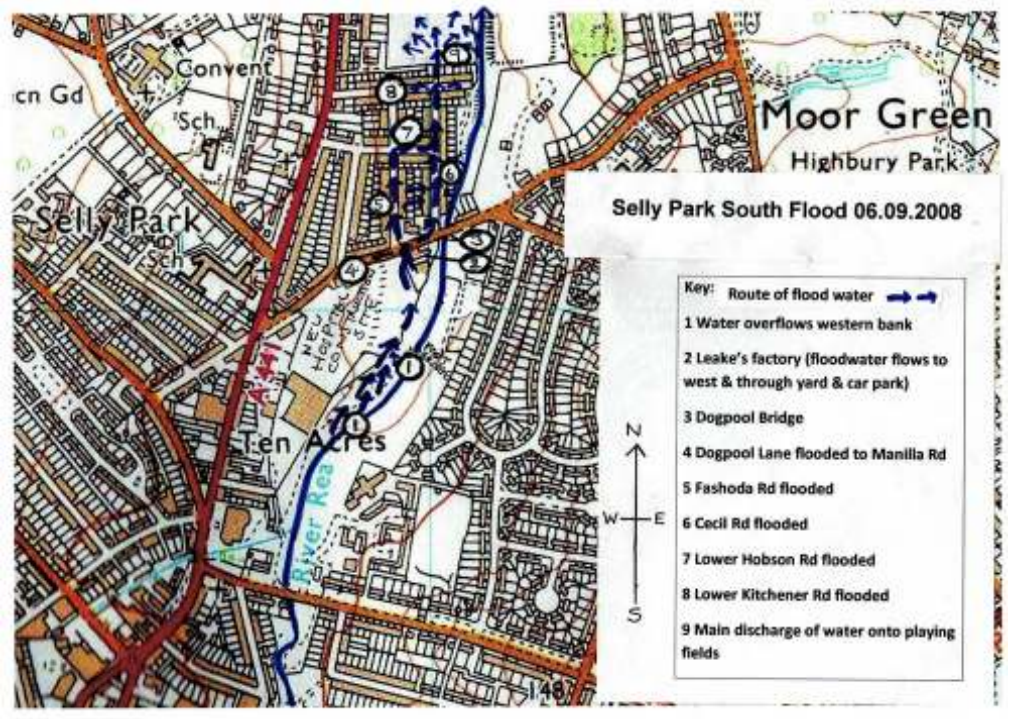
Dogpool Bridge two days later

1. Map of the River Rea and Tributaries in South Birmingham



2. Map of Selly Park South Flood 06.09.2008

(Base map © Crown Copyright, Ordnance Survey, 1999)



[Report revised 18.09.2008 to provide single unified URL link to photographic images]

Copies of maps also available electronically at these URLs:

http://www.flickr.com/photos/jc2002/2901340265/

http://www.flickr.com/photos/jc2002/2902176926/

All set of annotated photographs relating to the event is available at:

http://www.flickr.com/photos/jcweatherman/sets/72157607289113279/