

Appendix A.

Hucknall Section 19 Report

Introduction

Section 19 of the Flood and Water Management Act 2010 states:

1. On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers it necessary or appropriate, investigate:
 - (a) which Risk Management Authorities (RMAs) have relevant flood risk management functions, and
 - (b) whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.
2. Where an authority carries out an investigation under subsection (1) it must—
 - (a) publish the results of its investigation, and
 - (b) notify any relevant risk management authorities.

The objective of this report is to investigate which RMAs had relevant flood risk management functions during the flooding in July 2013 and whether the relevant RMAs have exercised, or propose to exercise, their risk management functions (as per section 19(1) of the Flood and Water Management Act 2010).

It should be noted that this duty to investigate does not guarantee that flooding problems will be resolved and cannot force others into action.

Background

On the afternoon of the 23rd July 2013 parts of Nottinghamshire were subjected to intense rainfall. The Met Office at Watnall recorded 35.6mm of rain in a 25 minute period up to 16.28hrs. As a result of this, parts of the County including Hucknall experienced major flooding with some 600 properties as well as roads and carparks affected across the county.

The Met Office issued an Amber Warning at 1503hrs on the 23rd July highlighting that there was a possibility of up to 60mm of rain fall within a 3 hour period. Whilst the warning was issued the short period between its release and the rainfall did not allow any of the RMAs to fully instigate any pre-planned responses. As a result much of the activity by the Agencies was reactive rather than pro-active but given the short time span between warning and event this is understandable. It should be noted that no criticism is made of the Met Office. The weather conditions on the day were both very unusual in nature as well as quickly developing making forecasting difficult.

Hucknall has been subjected to flooding on a number of other occasions including July 2007 although the previous events are not subject to this report.

Summary of flooding

Four main identifiable sources of the flood have been identified as well as some other generic factors: -

1. Baker Lane Brook
2. Titchfield Park Brook
3. Surface water runoff
4. Sewer pipe surcharge

Ground water flooding was not identified as a source of flooding as the underlying geology and soil composition of the area is generally free flowing. It should be noted though that in common with most of the Country the weather prior to the flooding had been dry and hot meaning that the general ground conditions were such that surface water could not percolate through the ground therefore increasing the level of overall run-off from surface water.

Figure 2.1 highlights the key areas referred to in this report.

Baker Lane Brook

From eyewitness accounts the Brook overtopped its banks at Ogle Street with flows then flowing into and through the town centre contributing to internal flooding of commercial premises and continuing to flow in the direction of Thoresby Dale. The Brook also overtopped at Thoresby Dale. These surcharged brook flows combined with the flow from the Wighay tributary, surface water from the Leisure Centre and highway runoff converging at the junction of Thoresby Dale and Perlethorpe Drive resulting in internal flooding to 8 properties. Having reached this point the flood water had a limited ability to flow through to the River Leen.

Although the Brook has a number of trash screens installed at the entrance to culverted sections to prevent debris from entering the culverts there is no evidence to suggest that these prevented water entering the culverts. Under normal conditions (i.e. those meeting the various drainage design standards) the overall capacity of the Brook is sufficient to deal with rainfall and subsequent surface water runoff. What is not clear is whether the culverted sections were at the time of the flood reduced in capacity due to a build-up of natural debris although given the volume of flow entering them it is likely that any such debris would have been cleared quickly by the hydraulic action of the water.

Titchfield Park Brook

Anecdotal evidence indicates that due to the limited capacity of the Brook and blocking of trash screens, it quickly overtopped its banks and combined with surface water flooding from Portland Road with the worst affected areas located south of the culverted sections in the vicinity of the recreation ground. As a result flooding was reported at Portland Road, St Johns Crescent, Story Gardens and Arden Close. Flooding at Arden Close was further exacerbated by surcharge from the combined sewer network.

In common with the Baker Lane Brook there are trash screens at the entrance to culverted sections installed to prevent debris from entering the culverts. Evidence suggests that these prevented water entering the culverts and contributed to flooding in the area. Under normal conditions the overall capacity of the Brook is sufficient to deal with normal rainfall and subsequent surface water runoff although it is acknowledged that in parts the narrowness of the channel does not provide any additional capacity to deal with any unusual high volumes of rain fall.

Surface water runoff

Surface water flowing from the Leisure Centre car park and housing between the Centre and Perlethorpe Drive contributed to the flooding of Thoresby Dale. Between Brookside Road and Jenny Burton Way surface water flows contributed to the flooding near to the recreation ground and south of Leen Valley Way. It is noted that a sewer pipe that runs partially above ground near to Arden Close acted as a small dam limiting and flow of water away from the Close.

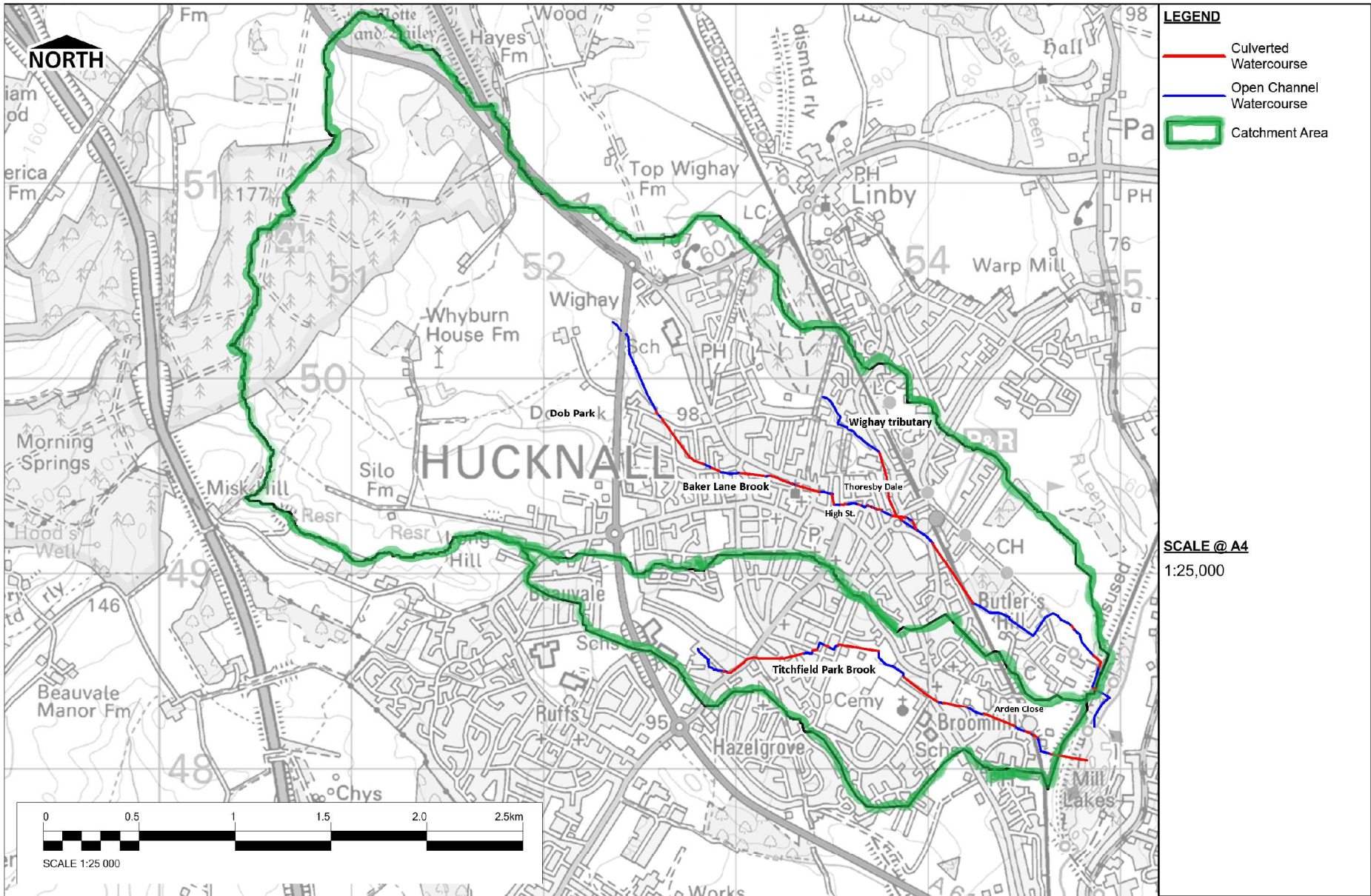
Whilst it was noted that both the Leisure Centre car park and a number of roads have limited numbers of gullies this is not seen as a contributing factor to the overall flooding given that the existing combined sewers that take the water collected from the gullies were as described below already at or beyond capacity.

Sewer pipe surcharge

Severn Trent Water has a network of surface water, foul and combined sewers in the area. These are designed to meet current standards in respect of capacity requirements. There has been no evidence that the sewers were blocked or reduced in capacity at the time of the flood. Within the Baker Lane Brook catchment there are two main combined sewers and it is possible that surcharge from these may have contributed to the flooding at Thoresby Dale. In the Titchfield Park Brook catchment the majority of surface water is captured by a combined sewer and evidence suggests that surcharge from this contributed to the flooding on Portland Road opposite Brookside.

Generic factors

The impermeable nature of the ground following a dry and hot period has already been highlighted as a contributory factor but it should also be noted that there has been a trend over the past decade or so for the front gardens of properties to be converted from gardens to hard standing for cars which in itself adds to the overall level of surface water runoff. Recent changes in planning legislation now requires planning permission be sought by residents for any future such action unless they are installing permeable surfacing. In addition historic development is likely to have contributed to the overall level of surface water runoff as well as interfering with the natural flow routes.



Drawing Title
HUCKNALL FLOOD STUDY
STUDY AREA

Figure Number
FIGURE 2-1

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Summary of causes of the flood

Under normal weather and rainfall conditions, i.e. those that do not exceed the various drainage design standards, the majority of the overall surface water drainage system in Hucknall has the capacity to cope, ensuring water is drained without causing flooding. However the extreme events of the 23rd July 2013 led to surface water runoff that was far in excess of what the systems have been designed to cope with. It is evident from investigating the flood that there is no single cause in terms of a failure of the established drainage systems other than those of a natural and uncontrollable nature namely the amount of rainfall, topography of the catchment and the impermeable nature of the ground.

Risk Management Authorities and their responsibilities

1. Nottinghamshire County Council

a. Lead Local Flood Authority

- i. Investigate significant local flooding incidents and publish the results of such investigations.
- ii. Play a lead role in emergency planning and recovery after a flood event.
- iii. If a flood happens, all local authorities are 'category one responders' under the Civil Contingencies Act. This means they must have plans in place to respond to emergencies and control or reduce the impact of an emergency. LLFAs also have a new duty to determine which risk management authorities have relevant powers to investigate flood incidents to help understand how they happened, and whether those authorities have or intend to exercise their powers.
- iv. By working in partnership with communities, LLFAs can raise awareness of flood risks.
- v. LLFAs should encourage local communities to participate in local flood risk management.

b. Highway Authority

- i. Maintenance of the public highways.

2. Ashfield District Council

- a. Riparian owners of various lengths of watercourses and associated assets in the Hucknall catchment.

3. Severn Trent Water Ltd.

- a. Maintenance of the public sewerage system.

4. Environment Agency

- a. Permissive powers for the Baker Lane Brook.

Risk Management Authority Responses to Flood

The following lists the actions taken by each RMA in response to the flooding both in the immediate aftermath as well as in the longer term:

1. Nottinghamshire County Council

- a. Initiated and co-ordinated Emergency Planning procedures.
- b. Provided emergency response crews to assist in management of flooding event.
- c. Participated in the police-led 'Tactical Coordinating Group', in accordance with Local Resilience Forum emergency plans.
- d. Initiated and led the S19 Flood Investigation.
- e. Commissioned and funded a detailed feasibility study into the hydraulic performance of key assets in the catchment and possible flood alleviation schemes.
- f. Secured (in principle) third party funding towards flood alleviation schemes.
- g. Participated in local community response and developed resilience measures.
- h. Commissioned feasibility and design of flood relief culvert in town centre and other flood mitigation options across both catchments.

2. Ashfield District Council

- a. Initiated Emergency Planning procedures.
- b. Provided emergency response crews to assist in management of flooding event including the clearing of trash screens.
- c. Actively engaged in S19 Flood Investigation.
- d. Participated in local community response, developed resilience measures and created resident based flood support groups.
- e. Attended NCC flood warden training.
- f. Promoted and managed Repair and Renew grant for some 65 properties.

3. Severn Trent Water Ltd.

- a. Provided emergency response crews to assist in management of flooding event.
- b. Actively engaged in S19 Flood Investigation.
- c. Investigating hydraulic operation and standards of public sewers known to have surcharged during the event.

4. Environment Agency

- a. Actively engaged in S19 Flood Investigation.
- b. Undertook rainfall analysis of the July 2013 event to provide the basis of all Flood Investigations across the County.
- c. Participated in local community response.
- d. Cleared Baker Lane Brook Trash Screens.
- e. Undertook Baker Lane Brook Culvert CCTV surveys.
- f. Provided all flood risk data to assist in the S19 Flood Investigation.
- g. Actively helped secure FDGiA and Local Levy funding for future flood risk improvements.
- h. Assisted in the design of potential future flood risk options working in close partnership with NCC Highways.

The investigation concludes that all risk management authorities have, and continue to, exercise their respective functions in response to the flood.

Additional information.

The County Council, working closely with The Environment Agency, has as a result of its investigatory works designed a flood relief culvert to be incorporated into the highway works which are part of the Hucknall Town Centre Improvement Scheme to be completed in 2017. This will take excess flows from the Baker Lane Brook during storm events and reduce the risk of flooding in the Thoresby Dale and downstream area.

Also commissioned are a number of feasibility studies into other flood alleviation proposals. Details of any proposals carried into detailed design, including financial implications, will be reported on when appropriate.

Future Actions

The following have been identified as ways of promoting clarity of responsibilities and identifying actions that will ultimately reduce the overall risk and consequence of future flooding in Hucknall.

1. The County Council to continue to work with communities on resilience measures.
2. The County Council to pursue feasibility and design of further flood alleviation measures and secure funding for implementation where necessary.
3. The County Council will consult with the community on any future Flood Risk Management proposals.

Working with the communities at risk and educating them on resilience measures and emergency plans will help prepare them for future events.

Further partnership working between the RMAs will also help in being prepared for any future issues, with clarity of roles and responsibilities shared amongst all parties to ensure an effective response and preparedness for future events.