Nottinghamshire County Council

APPENDIX A

SECTION 19 REPORT – WORKSOP – AUGUST 2022

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.
   (b) Whether each of those RMAs 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) of Section 19 it must:-

   (a) Publish the results of its investigation.
   (b) Notify any relevant RMAs.

3. This report sets out the results of such investigation detailing which RMAs had relevant flood risk management functions during the flooding in August 2022 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).

4. The Risk Management Authorities for this area of Nottinghamshire are the Environment Agency (EA) (Derbyshire, Nottinghamshire and Leicestershire), Bassetlaw District Council (BDC), The Nottinghamshire County Council (NCC) as Lead Local Flood Authority (LLFA), The Nottinghamshire County Council as Local Highway Authority (in relation to which officers consulted Via East Midlands Ltd as the agency involved in operational highways functions (Via)), Severn Trent Water Ltd. (STW) and Nottinghamshire Fire and Rescue.

5. 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

6. Worksop is a market town within the District of Bassetlaw, Nottinghamshire. It has a population of approximately 41,820 people according to the 2011 census.

7. On the evening of 16th of August 2022 at around 18:30pm, areas of Worksop suffered a significant flood event caused by short duration, intense rainfall. Over a four-hour period, 97.8mm of rain was recorded to have hit the ground within Worksop, with 46mm of that recorded within a single hour (Figure 1). Consequently, 87 Residential Properties, 20 Businesses and 1 critical infrastructure property (a hospital) were subject to internal flooding with more suffering flooding to gardens and outbuildings. A location map is shown in Figure 2.

River gauge data and on-site observations indicate that the River Ryton stayed within its banks during the event.

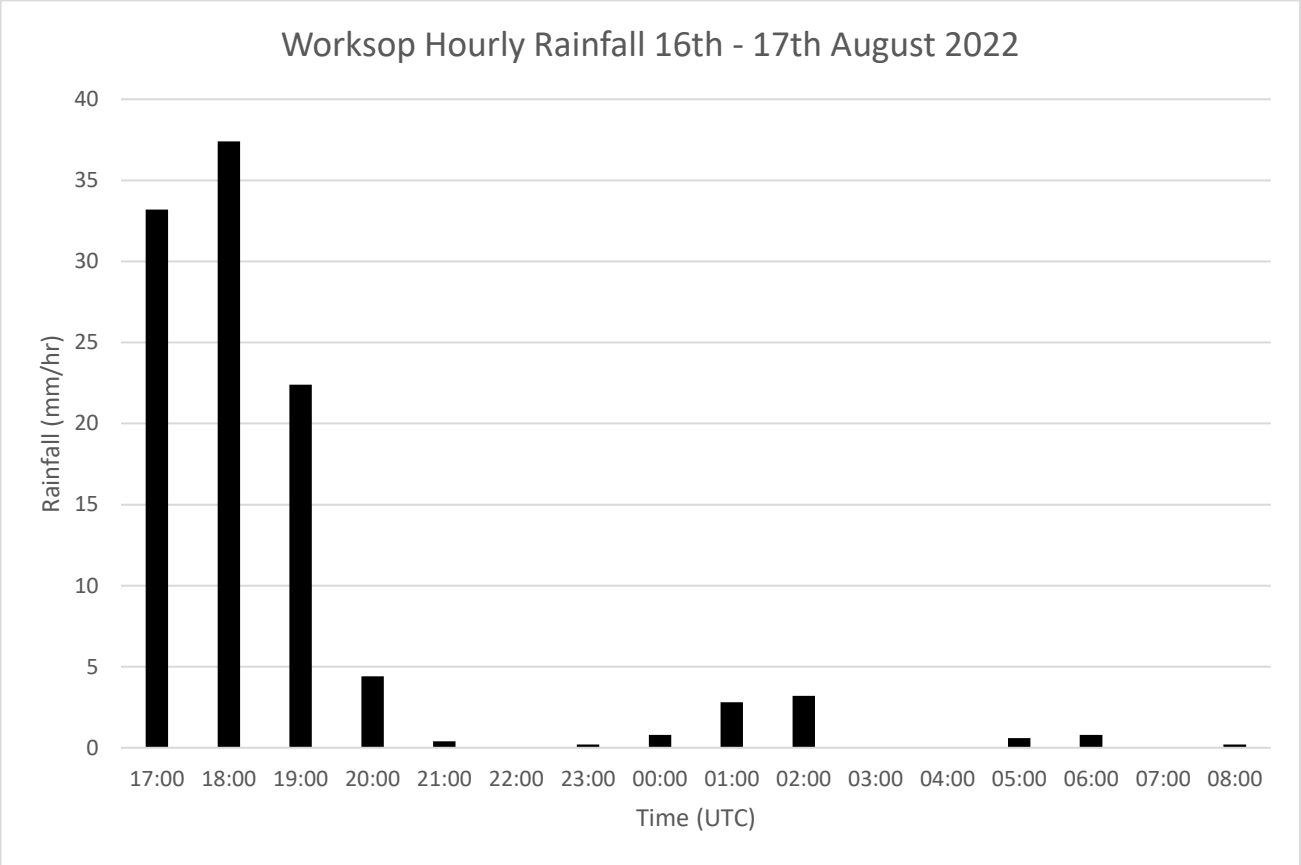


Figure 1. Worksop Hourly Rainfall 16th - 17th August 2022.

8. Figure 3 shows a heatmap of the main areas affected by flooding. The areas affected were:

- Rydal Drive
- Lady Walk, Redwing Close, Fulmar Way
- Longhurst, Jardine and Voce Court
- Queensway
- Gateford Road
- Sandy Lane
- Godfreys Court
- Central Avenue, Allen Street and Hardy Street
- Manton Villas
- Stanley street and Mount Avenue
- Boundary Row

This list is not exhaustive as there were other isolated instances of flooding across Worksop.

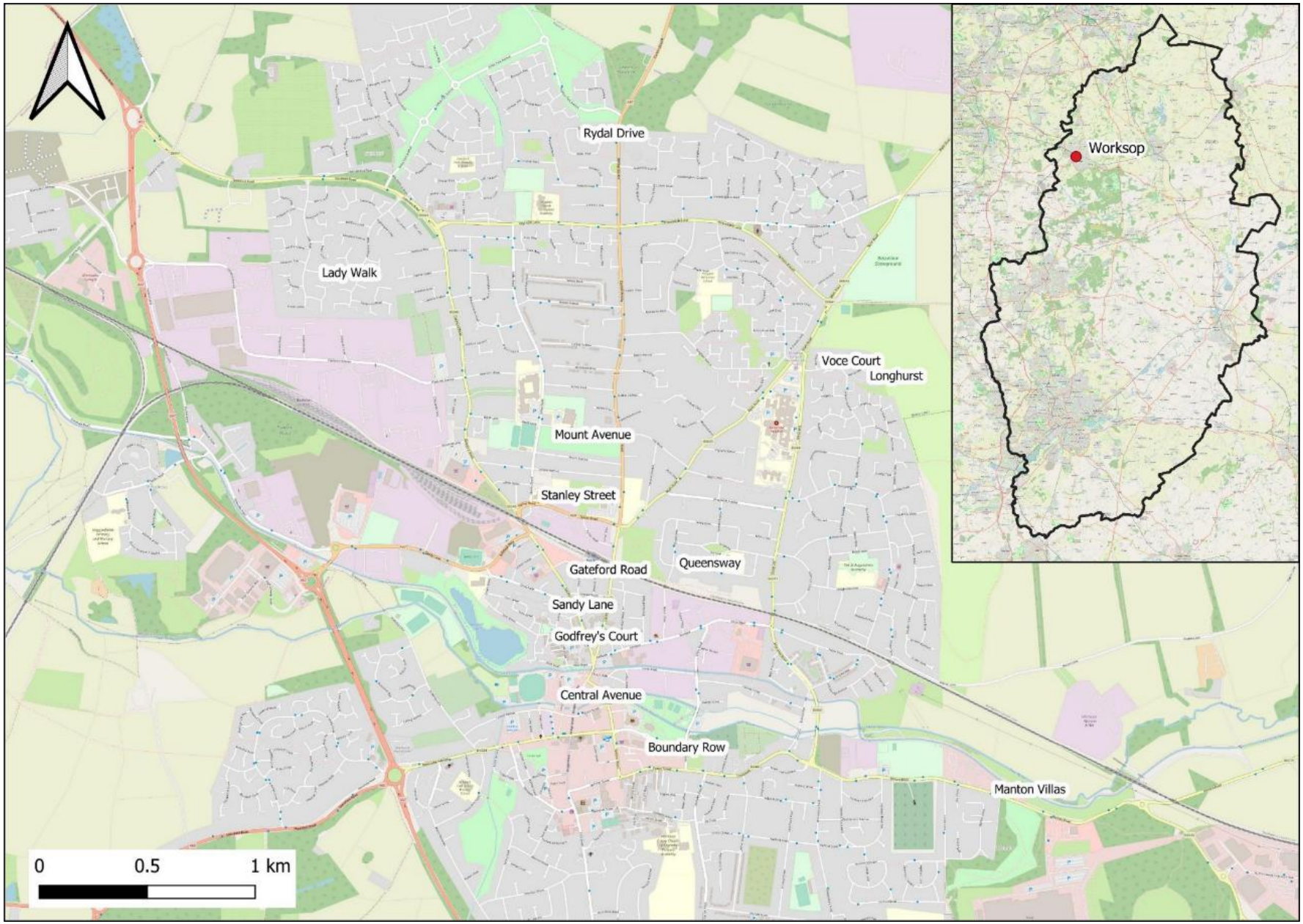


Figure 2. Map of Worksop.

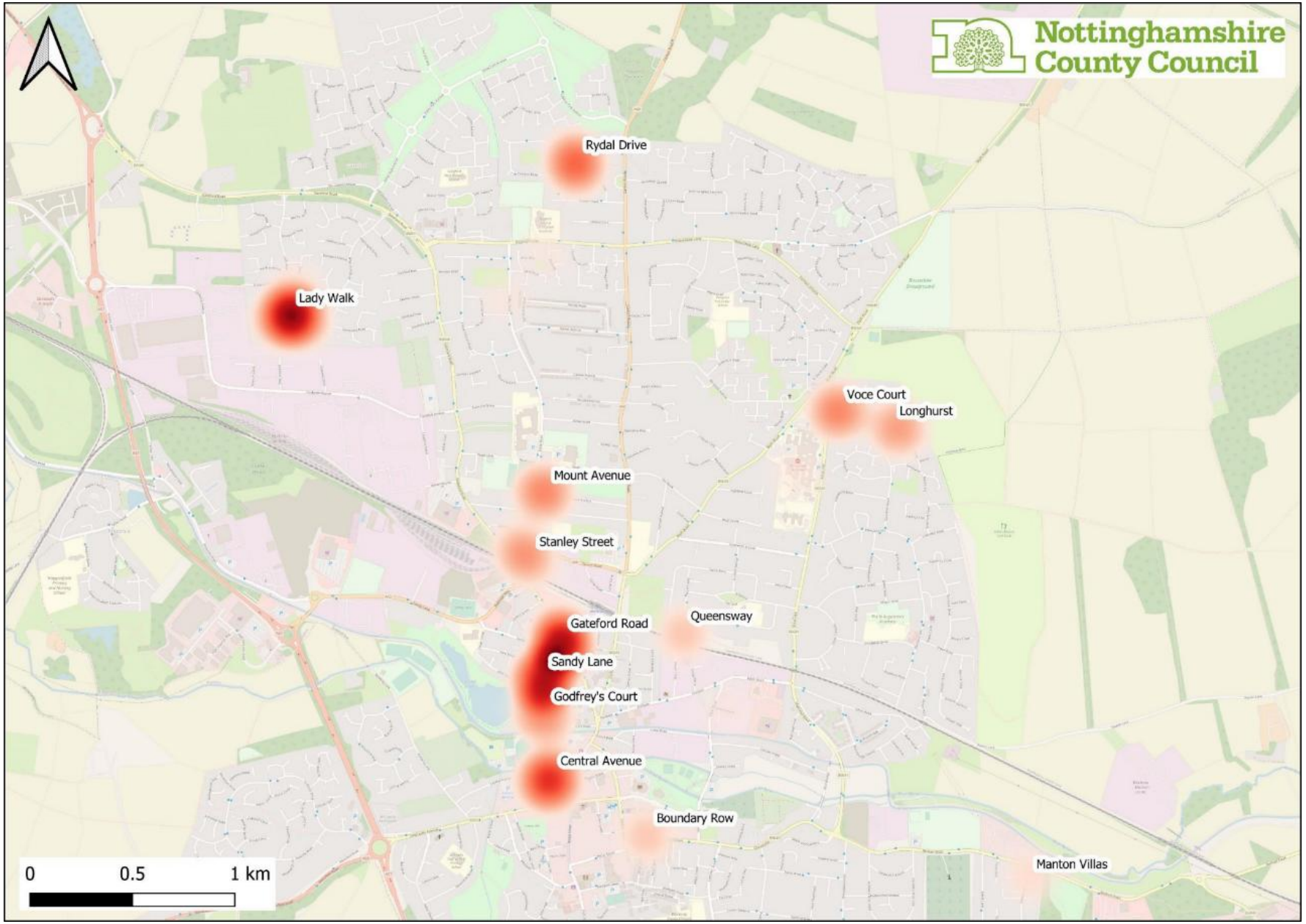


Figure 3. Flood affected areas heatmap. Darker red denotes increased number of properties affected.

Summary of flooding and its causes

9. *Rydal Drive*

As a result of intense rainfall, seven residential properties were internally flooded on Rydal Drive. At the corner of Rydal drive, indicated by the red oval in Figure 4, a low spot is present in which flooding occurred. Residents reported highway flooding with potential flood damage exacerbated by vehicles travelling through it.



Figure 4. Location Plan – Rydal Drive.

10. *Lady Walk, Redwing Close, Fulmar Way*

Two residential properties on Fulmar Way, seven residential properties on Lady Walk and seven residential properties on Redwing close suffered internal flooding following the rainfall on the 16th of August (Figure 5). Several properties on Lady Walk reported that despite existing Property Flood Resilience (PFR) measures being deployed, floodwater ingress occurred. Trash lines observed following the event indicated highway flooding along all three roads.

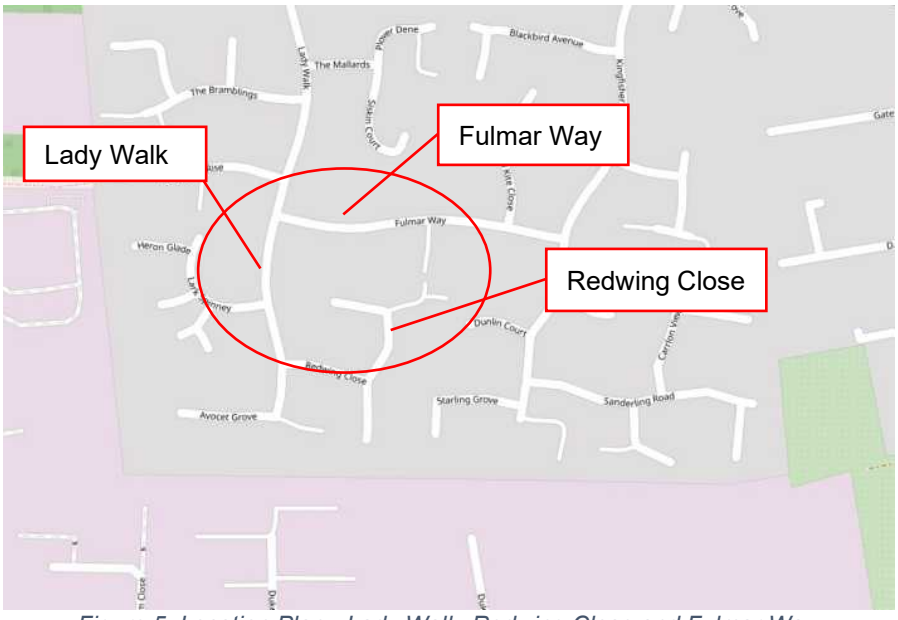


Figure 5. Location Plan - Lady Walk, Redwing Close and Fulmar Way.

11. Longhurst, Jardine and Voce Court

Three residential properties on Jardine, one residential property in Voce Court and four residential properties on Longhurst suffered internal flooding (Figure 6). One commercial property also suffered internal flooding on Longhurst. Predicted surface water flood risk is shown in Figure 7.

During the event, water flowed directly towards Jardine and Voce Court from the West and North of the catchment resulting in internal flooding of properties. Water then flowed towards Longhurst where a low spot exists within the topography. As a result, highway flooding and internal property flooding occurred at Longhurst.

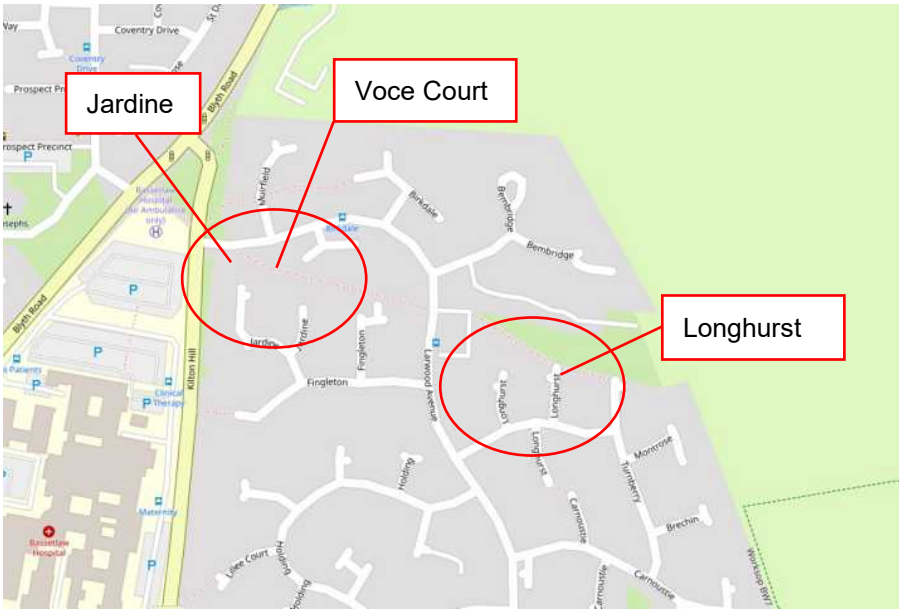


Figure 6. Location Plan - Longhurst, Jardine and Voce Court.

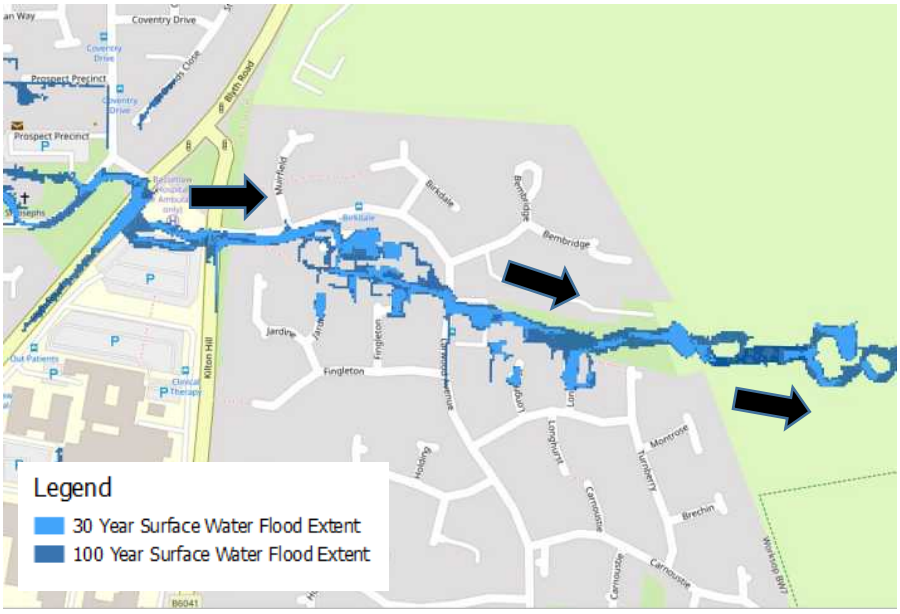


Figure 7. Predicted Surface Water Flood Extents – Longhurst, Jardine and Voce Court.

12. Queensway

Three residential properties internally flooded on Queensway. Water flowed from the north of the catchment to the south of Queensway where it is impounded by the higher topography of the railway line (Figures 8 and 9). This resulted in internal flooding of properties.



Figure 8. Location Plan – Queensway



Figure 9. Predicted Surface Water Flood Extents – Queensway.

13. Gateford Road, Sandy Lane and Godfrey's Court

On Gateford Road, ten residential properties and one commercial property suffered internal flooding whilst at Sandy Lane Flats and Godfrey's Court, thirteen and five residential properties internally flooded respectively. Locations are shown in Figure 10. Surface water flood risk mapping in Figure 11 indicates that water flowed from Gateford Road from the North of the Catchment to Sandy Lane and Godfrey's Court in the South. The majority of properties affected by the flooding were ground floor, single storey dwellings.

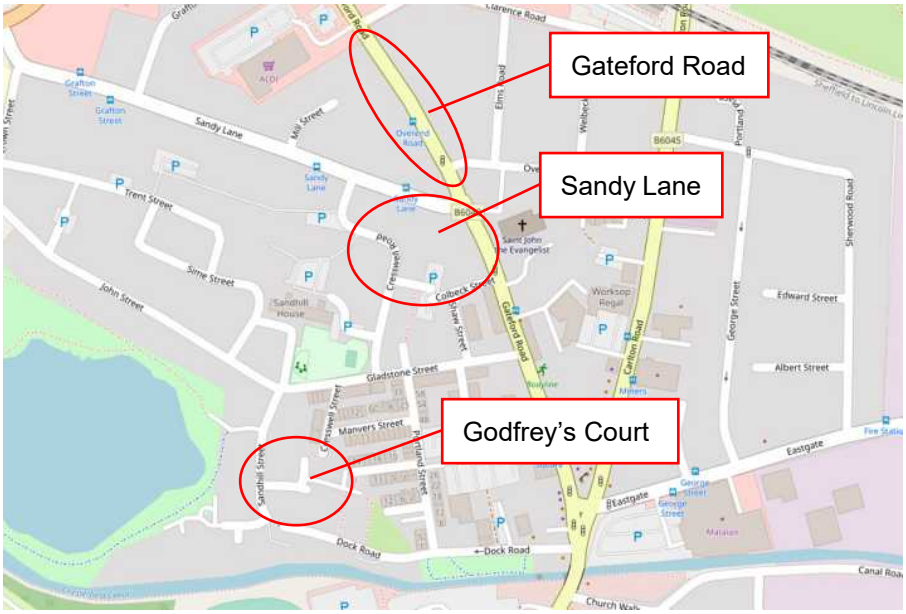


Figure 10. Location Map - Gateford Road, Sandy Lane and Godfrey's Court.

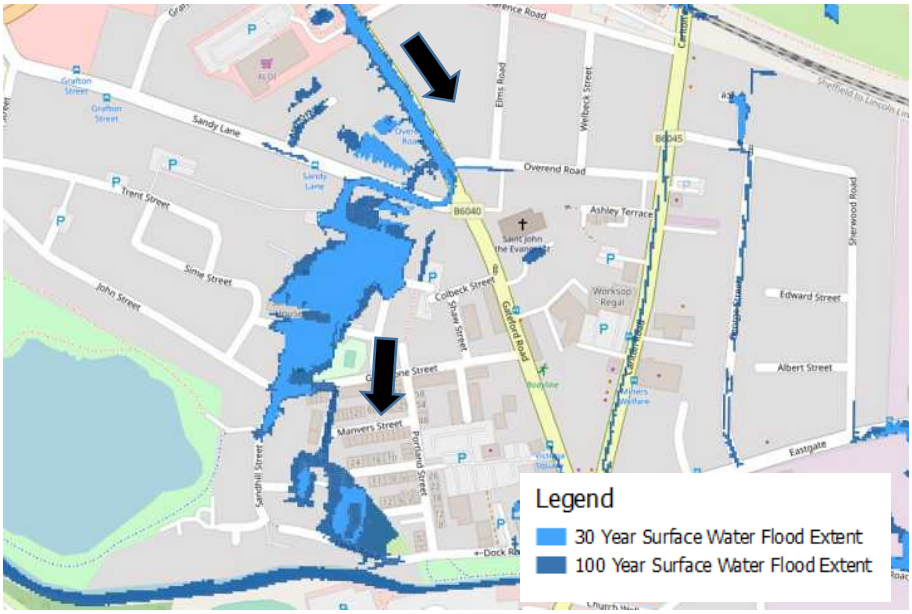


Figure 11. Predicated surface Water Flood Extents - Gateford Road, Sandy Lane and Godfrey's Court.

14. *Central Avenue, Allen Street and Hardy Street*

Five Businesses on Central Avenue, Four Businesses on Hardy Street and Two residential properties on Allen Street suffered internal flooding (Figure 12).

Many of the properties in the area were fitted with PFR Barriers to prevent ingress of floodwater following previous events. The vast majority of these had been successfully deployed and either had worked effectively or properties were at a level where they had not needed such. However, some properties experienced minor ingress of floodwater due to brickwork ingress, the bow waves from vehicles overtopping the PFR barriers or ingress prior to the barriers being deployed.

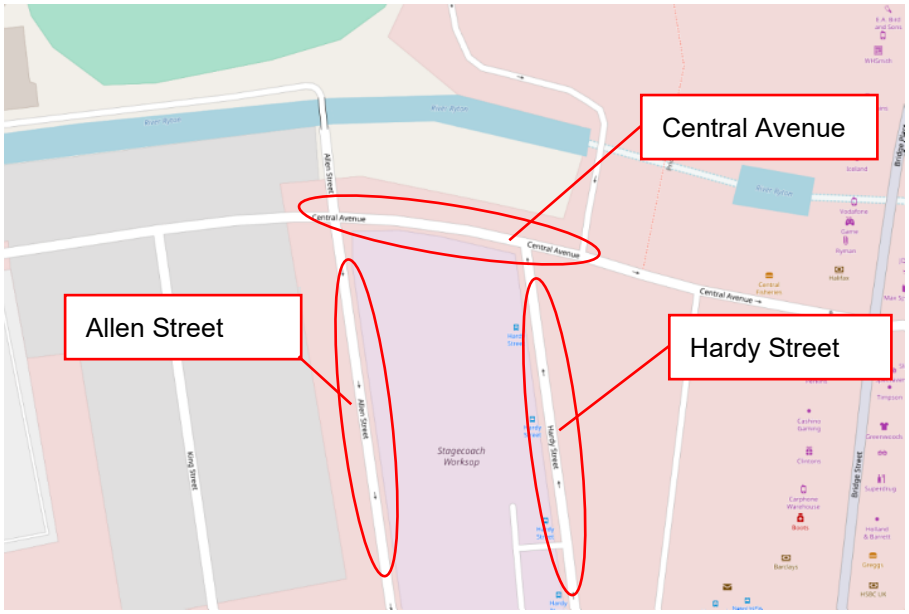


Figure 12. Location Map - Central Avenue, Allen Street and Hardy Street

15. Manton Villas

One property on Manton Villas and one business on Retford Road was internally flooded (Figure 13).

Surface water flowed down the highway of Manton Villas following the topography towards Retford Road. This flow path continued towards Retford Road and flooded a business property. Figure 14 shows that surface water flood risk mapping predicts a flow path from the south.



Figure 13. Location Plan - Manton Villas.

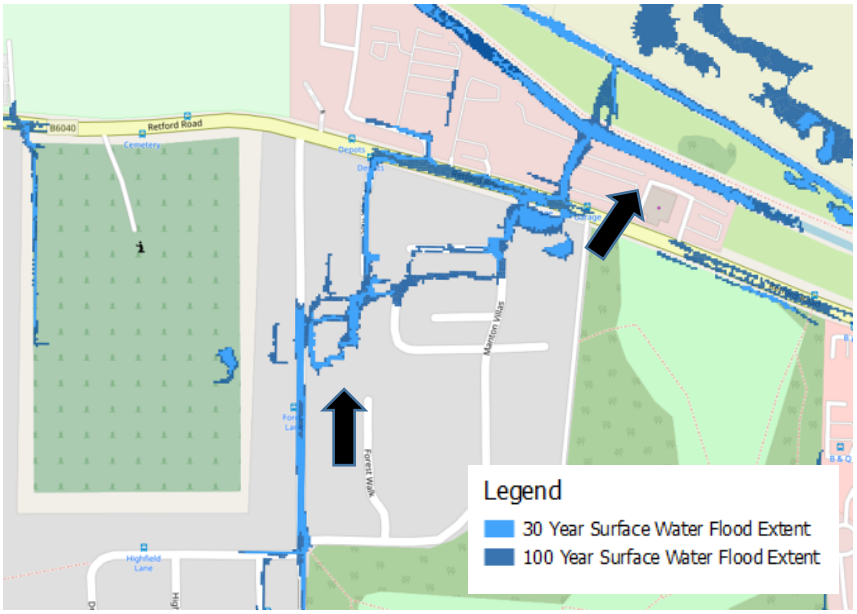


Figure 14.Predicated surface Water Flood Extents - Manton Villas.

16. *Stanley street and Mount Avenue*

Four residential and two commercial properties were internally flooded on Stanley Street, with a further four residential properties internally flooded on Mount Street (Figure 15).

Overland flow travelled down the catchment onto the playing fields becoming impounded by Valley Road and Mount Avenue. This resulted in the internal flooding of residential properties.

Surface water flows continued along Stanley Street. At the south end of Stanley Street, flood depths were of a great enough depth to overtop PFR measures which had been installed to commercial properties there.

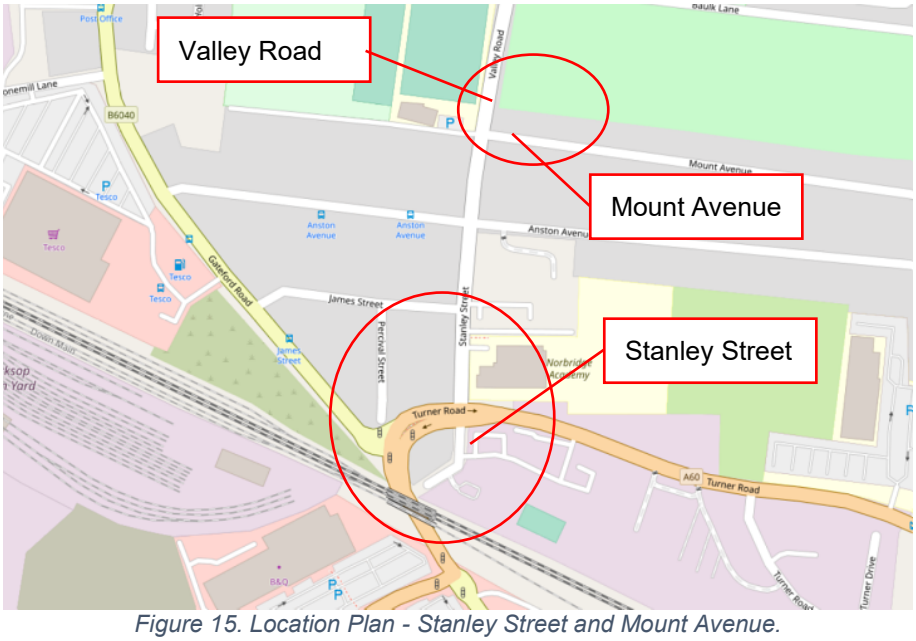


Figure 15. Location Plan - Stanley Street and Mount Avenue.

17. *Boundary Row*

Two Residential properties were flooded on Boundary Row and One Business on Potter Street (Figure 16).

Flows on Potter Street reached the topographic low point of the road, at the junction with Boundary Row. Surface water then flowed down Boundary Row, accumulating at the low point at the end of the road.

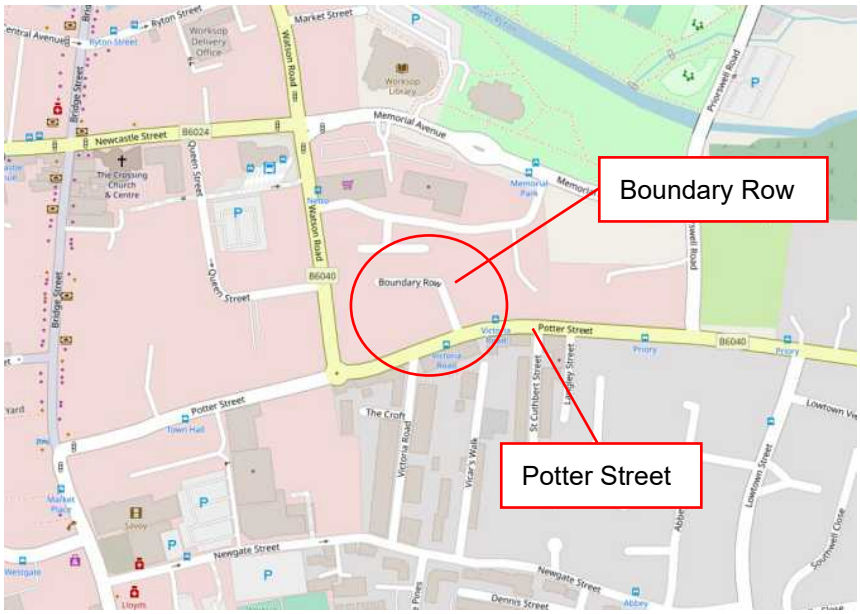


Figure 16. Location Plan - Boundary Row

Risk Management Authorities and their responsibilities:

18. The 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. As the Lead Local Flood Authority, we 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, Lead Local Flood Authorities can raise awareness of flood risks.
v. Lead Local Flood Authorities should encourage local communities to participate in local flood risk management.

b) Emergency Planning.

i. 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.

c) Highway Authority (NCC/VIA East Midlands Ltd).

i. Maintenance of the public highways including highway drainage assets.
ii. Provided site-based presence and investigations immediately following the event.

19. Bassetlaw District Council.

a) Category one responder 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.

20. The Environment Agency.

a) Category one responder 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.
b) Maintenance and Management of the River Ryton.

21. Severn Trent Water Ltd.

a) Maintenance of the public sewerage system.

b) As a water and sewerage company, STW manage the risk of flooding from their water supply and sewerage facilities. This includes;

- Surface water sewers – these carry rainfall and surface water away from properties to watercourses;
- Foul water sewers – these carry wastewater away from properties to be treated;
- Combined water sewers – these drain both wastewater and surface water from properties along with run off from highways.

c) Managing the impact of flooding to their networks by ensuring their systems have the appropriate level of resilience to flooding.
d) Engage with RMAs on how water and sewerage company assets impact on local flood risk.
e) STW are Category 2 responders under the Civil Contingencies act, providing emergency response and supporting the management of flooding events.

Risk Management Authority Responses to Flood

22. 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:

23. The Nottinghamshire County Council.

a) Lead Local Flood Authority

i. Initiated and led the Section19 Flood Investigation.
ii. Administered the Flooding Hardship Fund.
iii. Held a public drop-in session on the 8th September to offer support and discuss the flooding experienced by impacted residents and businesses.
iv. Started to actively recruit Flood Signage Wardens to establish a Road Closure Scheme for areas of Worksop.

b) Emergency Planning

i. Initiated and coordinated emergency planning procedures, such as vulnerable people check for the affected streets identified by emergency services for potential evacuation.
ii. Put emergency accommodation on standby and liaised with Police on the scene and the Environment Agency to maintain situational awareness.

c) Highway Authority (NCC/VIA East Midlands Ltd)

i. Responded with provision of 250 sandbags to Central Avenue and Priorswell Road area out-of-hours, and a further 400 sandbags as preventative measure the following day.
ii. Gully Cleansing unit in attendance following day targeting those areas most affected.
iii. Cleansing and investigation of highway drainage assets on roads where properties or highway had been flooded.
iv. Subsequent works have been recently completed or are pending with works to be completed by the end of October.

24. Bassetlaw District Council.

i. Provided emergency response support in management of flooding event including access to sandbags/aqua sacs and standby rest centre with housing needs support officer presence.
ii. Provided skips, caged vans and staffing support to residents to dispose of flood damaged property.
iii. Cleansing of significant detritus from roads, car parks and paths, liaising with the NCC gulley/drain team to co-ordinate works.
iv. Relocated affected tenants from Council properties.
v. Undertook repairs to affected Council housing properties.
vi. Actively engaged in the Section 19 Flood Investigation.
vii. Supported a resident/business post flooding support event.

25. Environment Agency.

i. Provided an emergency response crew to assist in management of the flooding event.
ii. Anticipated the scale of the event and operated their local flood alleviation assets.
iii. Coordinated with fellow risk management authorities to confirm the nature of the flooding was not fluvial; and advised against emergency evacuation of local households and advised that an emergency evacuation of local households due to fluvial flood risk from the River Ryton was unlikely to be necessary, based on forecast information.
iv. Issued the Flood Alert for the River Ryton and Tributaries on the 16th August at 18:27 to encourage the public and partners to be prepared for flooding. The Flood Warning river thresholds for the River Ryton were not reached during the event.
v. Assisted the Canal & Rivers Trust in operating their local assets.

26. Severn Trent (STW)

i. Prior and during the flood event, there was close monitoring of alarms at pumping stations.
ii. Following reports of flooding, STW attended site and supplied 3 tankers across Worksop.
iii. Flooding investigations, including CCTV work of STW's local sewer network, was completed following the flood to check for any network defects or blockages.
iv. STW has actively engaged with residents post flood event which helped gather further information on the event.
v. Hydraulic flood modelling is being undertaken at the time of publishing this report to assess the performance of the sewer system during the event.
vi. Evaluating rainfall data to understand the severity of the event.
vii. Actively engaged in the Section 19 Flood Investigation.

Additional information and Future Actions

27. All the Risk Management Authorities involved in this event are committed to continuing the investigations into the causes of this incident. Those investigations may identify further actions not listed below.

28. Where appropriate Nottinghamshire County Council and the Environment Agency administer a Flood Warden scheme, including supporting the provision of local sandbag stores in communities at risk of potential flooding. All equipment and training is provided for free should there be sufficient volunteer interest in the community. Further information on these services is available on Nottinghamshire County Council's website.

29. Nottinghamshire County Council are currently recruiting for a Community Flood Signage Scheme in Worksop and will facilitate the training package as soon as the volunteers are ready.

30. As the Lead Local Flood Authority we have witnessed and have experience of how flooding devastates communities. The most vulnerable in the community will be our priority. Nottinghamshire County Council will continue to work closely with partners and communities to identify ways of proactively reducing the risk, likelihood and consequences of future flooding events.