

APPENDIX D

SECTION 19 REPORT – GOTHAM – FEBRUARY 2020

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 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) of Section 19 it must:-
 - (a) Publish the results of its investigation.
 - (b) Notify any relevant Risk Management Authorities.
3. The objective of this report is to investigate which RMAs had relevant flood risk management functions during the flooding in February 2020 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 with a duty to respond to this flooding incident are, Nottinghamshire County Council (NCC) as Lead Local Flood Authority (LLFA), Nottinghamshire County Council as Highways Authority (Via East Midlands Ltd.), Rushcliffe Borough Council (RBC) and Severn Trent Water (STW).
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. Over the weekend of the 15th and 16th of February 2020 Storm Dennis hit parts of Nottinghamshire with 34mm (an average months' worth) of rain falling in 48 hours. Across the UK a record 594 flood warnings and alerts were in place over the weekend with 38 flood warnings and 16 flood alerts across Nottinghamshire as shown in Figure 2 below. Storm Dennis followed Storm Ciara which had hit the week previous bringing heavy rain and winds of over 90mph resulting in more than 220 flood warnings and alerts in place across England. Both storm events followed some 6 months of persistent and often heavy rainfall across the UK.

During Storm Dennis, Via East Midlands Ltd. (on behalf of Nottinghamshire County Council) facilitated 51 road closures, placed over 70 flood signs on the network to warn motorists and delivered over 4000 sandbags.

Storm Dennis is believed to have caused the worst winter floods in recent times, in part because the rain was so widespread but also because it has fell on ground already saturated from Storm Ciara the previous week. It triggered a record-breaking number of Environment Agency flood warnings and alerts in England on Sunday the 16th.

A major incident was declared at 07:00 on Sunday the 16th by the Tactical Co-Ordinating Group.

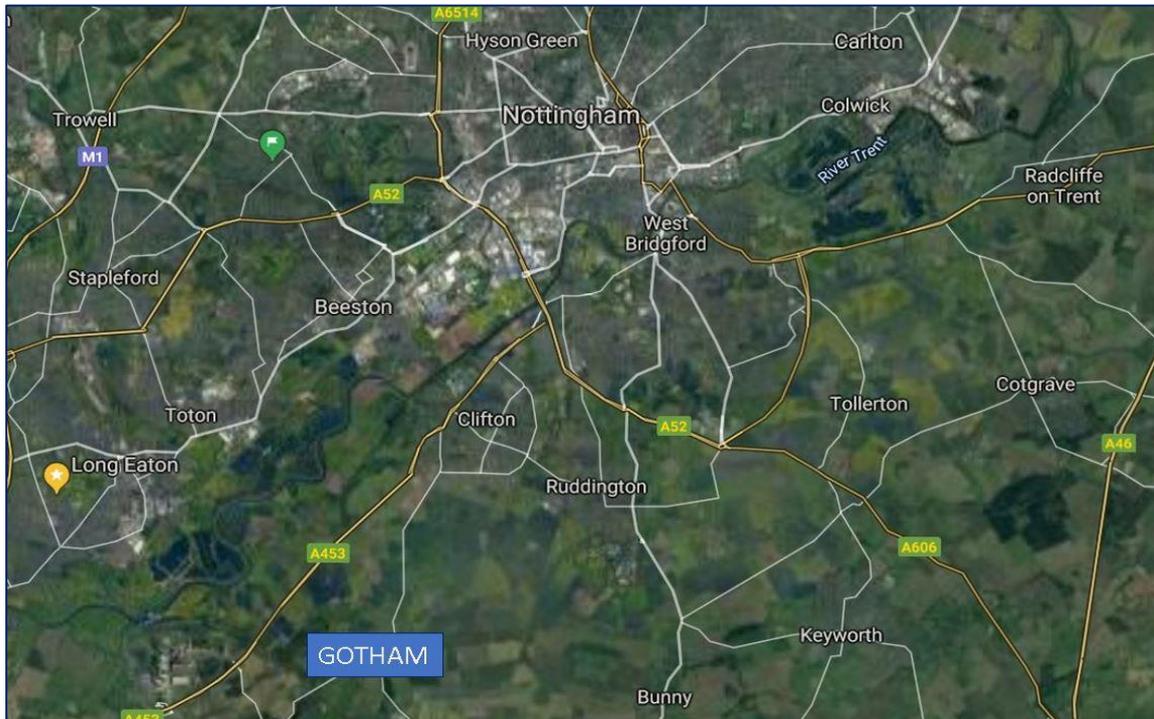


Figure 1. Location Plan

With the ground already saturated following one of the wettest autumn's on record, the heavy rain that fell on the 16th of February resulted in extensive flooding across the Nottinghamshire area including Gotham, a small village in Nottinghamshire with a population of approximately 1600 recorded in the 2011 Census.

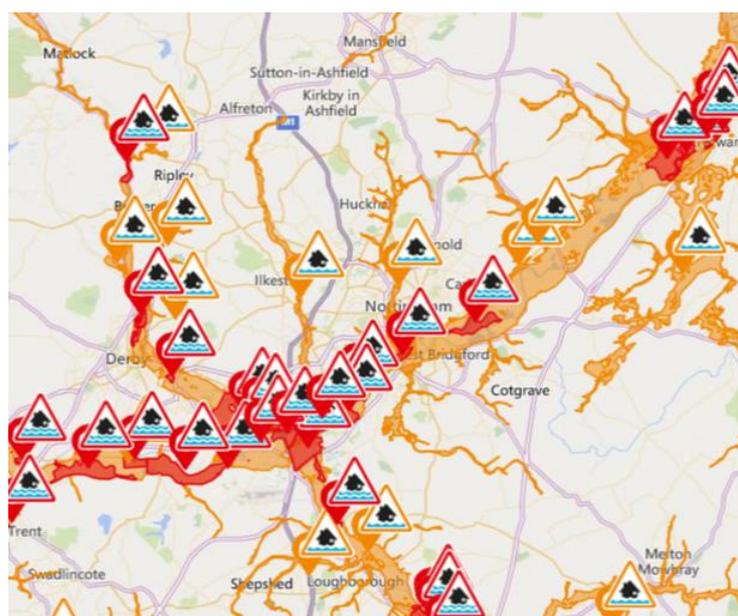


Figure 2. Flood Warnings and alerts across Nottinghamshire in February 2020

During the morning of the 16th of February, Gotham was subjected to a significant amount of rainfall with 31.6mm of rain recorded as falling between 12am and 12pm at the nearby Sutton Bonnington rain Gauge; 14.6mm of rain falling between 3am and 4am alone. Parts of Gotham suffered a significant flood event with 8 reported incidents of internal property flooding, combined with the flooding of many more gardens and curtilages and the public highway.

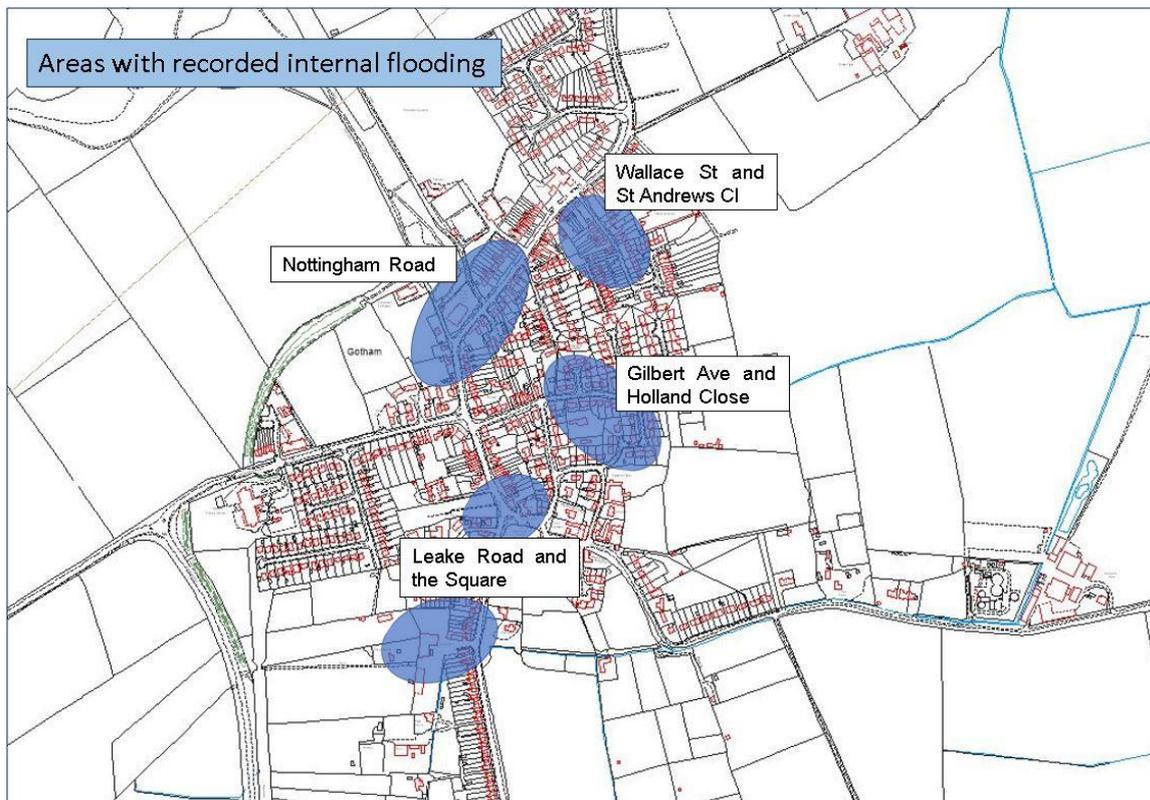


Figure 2. Plan of Gotham highlighting area affected by internal flooding

Summary of flooding and its causes

- The flooding that occurred in Gotham on 16th February was similar to the flooding that occurred in November 2019. 8 properties in total were internally flooded from two separate types of flooding, surface water and foul sewer; surface water which internally flooded 1 property on Leake Road, 1 on The Square and 2 on Nottingham Road and foul sewage affecting 1 property on Gilbert Avenue, 1 on Holland Close, 1 on Wallace Street and 1 on St Andrew's Close.

Surface Water

There are steep hills to the West of Gotham forming a crescent from the South of the village to the North with the gradient falling to the centre of the village. The hills are mainly farmland sectioned into several fields. The surface water that runs from that land ordinarily feeds the numerous ditches and ordinary watercourses which network around and through the village.

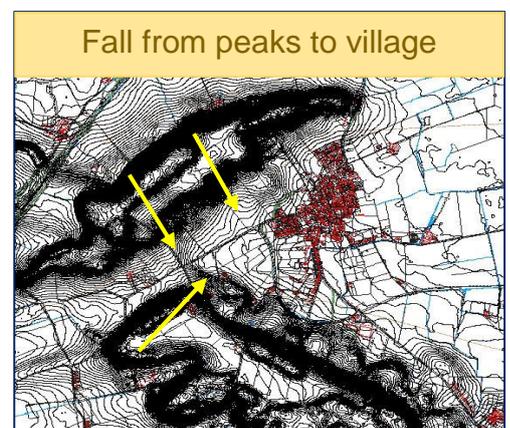


Figure 3. Contour plan showing fall from peaks to village.

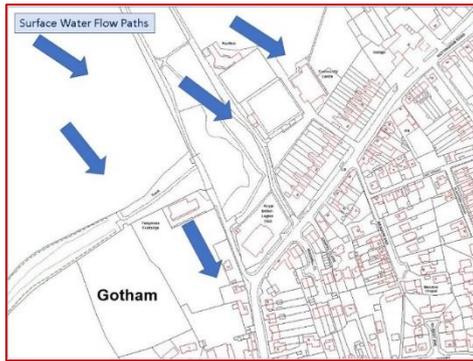


Figure 4. Flow Paths for Nottingham Road area

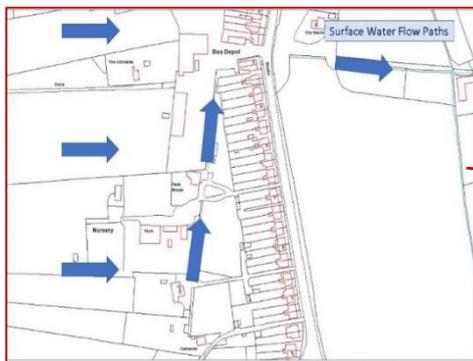


Figure 5. Flow paths for Leake Road area

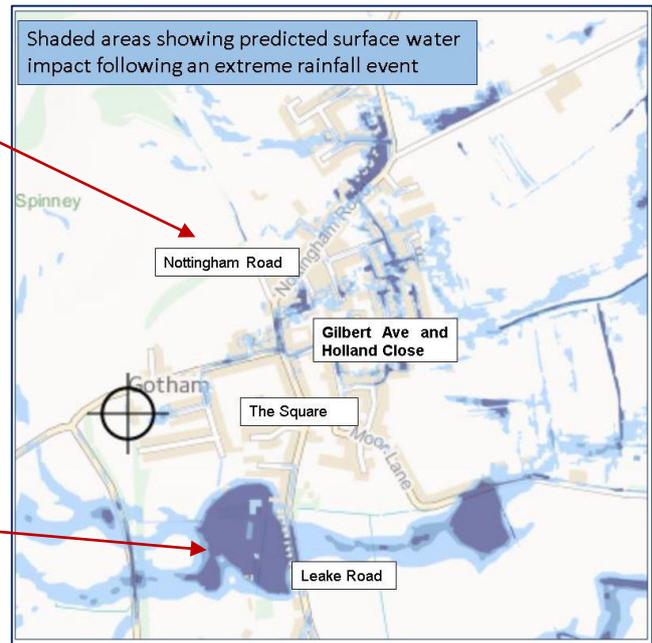


Figure 6. Environment Agency Flood Risk Map for surface water highlighting similarity with figures 5 and 6.

The heavy rain that Storm Dennis brought on the 16th of February followed Storm Ciara the previous week and an extended period of very wet weather which had saturated the surrounding land. The rain water from the heavy downpour that began in the late evening of the 15th fell on that ground but then ran straight off because the ground was waterlogged. The network of ditches and watercourses, some of which required maintenance, could not cope with the speed of run-off and overtopped. There were also areas where surface water run-off by-passed those watercourses running straight from the land into properties and onto the highway.

Once on the highway the surface water run-off combined with rain water to overwhelm the highway drainage and the public sewer system. It is believed that there is some interaction between this flooding and the foul sewer flooding described below.

Foul Sewer Water

The foul sewer system for Gotham has grown with the village. Partly foul sewer and combined sewer, it is a complicated network that ultimately discharges to a treatment and pump facility off Moor Lane to the South of the village.

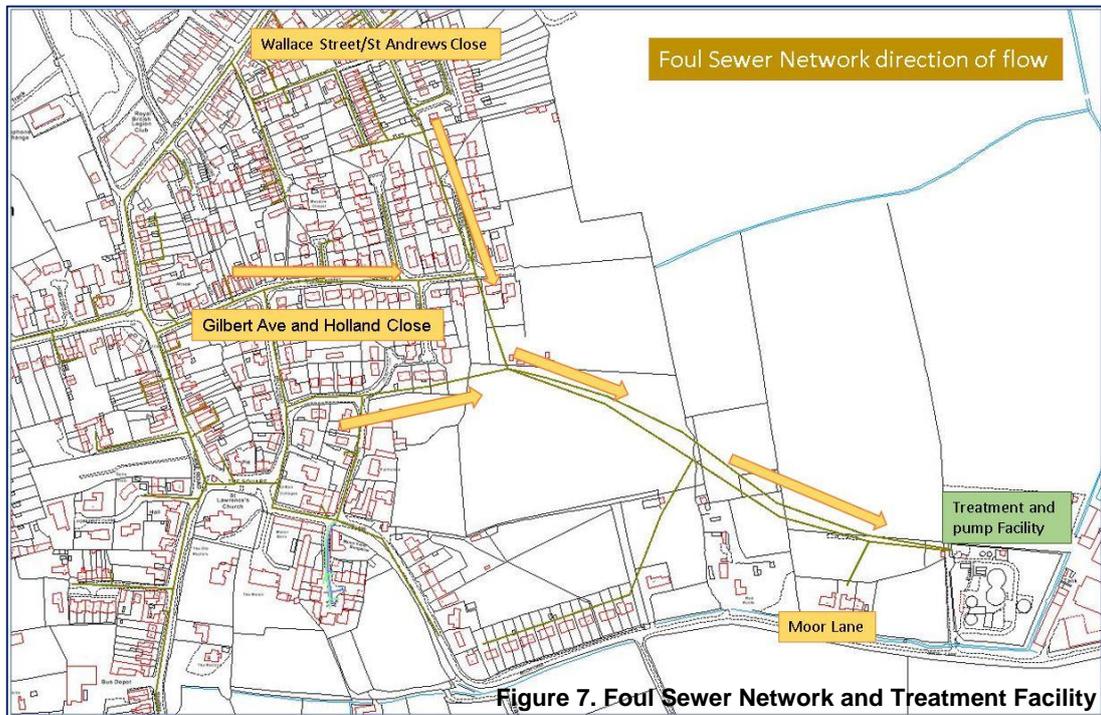


Figure 7. Foul Sewer Network and Treatment Facility

During the early hours of the 16th, foul sewage water backed up and spilled out of private drains and public sewer manholes in the highway. Severn Trent Water investigations have confirmed that there is some surface water ingress into the foul sewer system which is causing capacity issues.

Risk Management Authorities and their responsibilities

8. Nottinghamshire County Council

a) Lead Local Flood Authority

- i. Play a lead role in emergency planning and recovery after a flood event.
- ii. Lead Local Flood Authorities also have a 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.
- iii. By working in partnership with communities, Lead Local Flood Authorities can raise awareness of flood risks.
- iv. Lead Local Flood Authorities should encourage local communities to participate in local flood risk management.
- v. Investigate significant local flooding incidents and publish the results of such investigations.

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 (Via East Midlands Ltd. on behalf of The Nottinghamshire County Council)

- i. Maintenance of the public highways including highway drainage assets.

- ii. Provided site-based presence and investigations immediately following the event.
9. Rushcliffe Borough Council
- i. 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.
10. Severn Trent Water
- i. Maintenance of the public sewage system.

Risk Management Authority Responses to Flood

11. The following lists the actions taken by each Risk Management Authority in response to the flooding both in the immediate aftermath as well as in the longer term:
- a) Nottinghamshire County Council:
 - i. Initiated and co-ordinated Emergency Planning procedures.
 - ii. Administered Nottinghamshire County Council's Flood Hardship Fund to affected residents.
 - iii. Delivered sandbags where a need was identified.
 - iv. Attended Parish Council Community Flood meeting on 28th February to offer advice and assistance to those personally affected by the flooding.
 - v. Following this event, and instigated by previous survey work, liaised with private landowners and secured modifications to culverts and maintenance of watercourses in private land.
 - vi. Initiated and led the Section19 Flood Investigation.
 - b) Rushcliffe Borough Council
 - i. Provided emergency response support to residents in management of flooding event.
 - ii. Administered Flood Hardship Fund and Central Government Flood Emergency Grants to residents.
 - iii. Delivered sandbags to affected communities
 - iv. Worked with the Parish Council to ensure the flood resilience store was stocked with sandbags.
 - v. Managed and continue to manage the recovery in affected communities.
 - vi. Actively engaged in the Section19 Flood Investigation.
 - c) Severn Trent Water
 - i. Provided emergency response support to residents in management of flooding event.
 - ii. Continue to investigate the reasons for the foul sewer issues
 - iii. Actively engaged in the Section 19 Flood Investigation.

Additional information and Future Actions

12. Gotham has historical flood issues with recent incidents in 2012, 2016 and 2019. The 2016 and 2019 events were severe enough to warrant Section 19 reports which have been published.

Following the 2019 and 2020 events Nottinghamshire County Council have carried out significant amounts of work to survey existing drainage identified as defective, to clear and repair damaged culverts and to encourage land owners to replace damaged and insufficient culverts and clear watercourses. However, it has also been identified that a survey of the watercourses and ditches in the upper catchment will also be required.

Between the 2019 event and this event in February 2020, there have been other incidents in December 2019 and January 2020 of flooding from foul sewer water. Severn Trent Water have carried out extensive preventative measures and investigation work in Gotham to combat this increased risk. Tankers have been operating constantly to assist a system running at near full capacity. They have also been liaising closely with residents directly affected, implementing preventative work within properties where it has been identified as beneficial. The complicated investigation into possible surface water ingress is continuing with remedial works taking place where required.

The community of Gotham has access to a flood resilience store which contains a stock of sandbags. Those sandbags were made available and distributed by local volunteers during this event, vital work to check and keep clear culverts and watercourses was also done by members of the community. If it was not for this community spirit the number of properties internally flooded could well have been higher.

All the Risk Management Authorities involved in this event are committed to continuing the investigations into the causes of this incident. Funding is being sought to enable a full catchment study into the flood risk in Gotham. We will be informed of the outcome of this bid in spring/summer 2020. The Environment Agency will continue to support the Lead Local Flood Authority to undertake future work within this community.

Where appropriate Nottinghamshire County Council and the Environment Agency administer a Flood Warden scheme, including supporting the provision of local sandbag stores, and a Community Flood Signage Scheme 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 are available on Nottinghamshire County Council's website.

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. NCC will continue to work closely with partners and in particular the community of Gotham to identify ways of proactively reducing the risk, likelihood and consequences of future flooding events.