

APPENDIX H

SECTION 19 REPORT – LOWDHAM – 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 RMAs.
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.), The Environment Agency (EA), Trent Valley Internal Drainage Board (TVIDB), Severn Trent Water (STW) and Newark and Sherwood District Council (NSDC).
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. Lowdham has a significant history of flooding with recently recorded events, in 1999 where 300 properties were flooded, 2007, 2012, 2013 and 2019, a number of which have been the subject of previous Section 19 reports. Triggered by this history of flooding The Environment Agency, as lead Risk Management Authority for Main Rivers are carrying out a major Flood Alleviation feasibility study for the catchment with the hope of identifying economically viable proposals that will reduce the risk and consequences of future flooding events. Following the significant flooding in 1999 the Environment Agency undertook flood storage works on the Cricket Pitch in 2000.

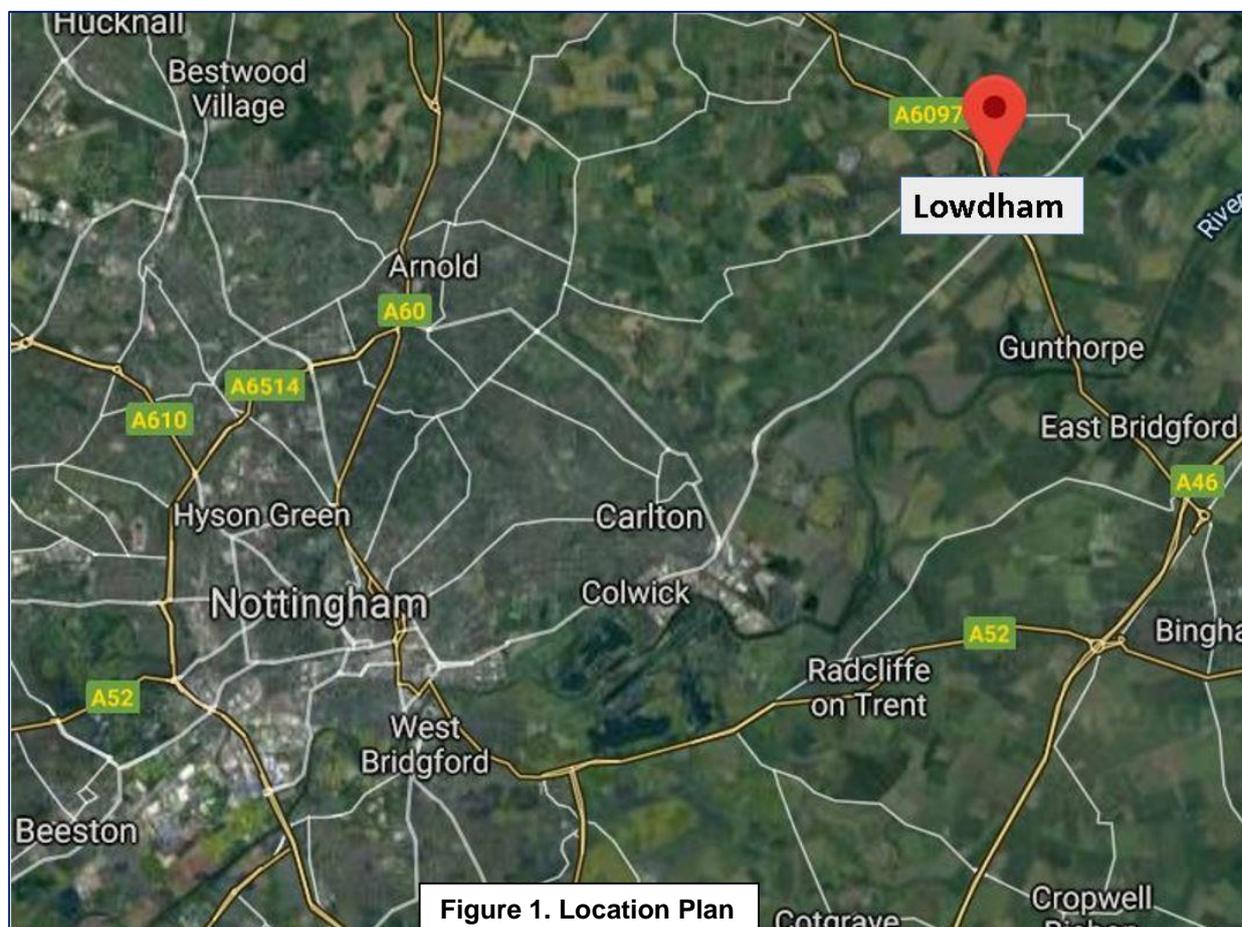
Over the weekend of the 15th and 16th of February 2020 Storm Dennis hit parts of Nottinghamshire with 34mm (an average month's worth) of rain falling in 48 hours. Across the UK a record 594 flood warnings and alerts were in place over the weekend with 38 flood warnings and 16 flood alerts across Nottinghamshire as shown in Figure 2 below. Storm Dennis followed Storm Ciara which had hit the week previous and both 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 the ground was 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 16th.

In Lowdham, Nottinghamshire County Council's Adult Social Care & Public Health Team evacuated a vulnerable person to a place of safety following welfare checks in the community.

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

With the ground already saturated following one of the wettest autumn and winter periods on record, the heavy rain that fell on the 16th of February resulted in extensive flooding across the Nottinghamshire area including the village of Lowdham, situated in the Newark and Sherwood District of Nottinghamshire and having a population of 3,334 at the 2011 census.



The village is served by the Cocker Beck, a watercourse designated as Main River, that runs from the north of the catchment, along its western boundary and ultimately discharging to the River Trent to the south of the village. Figure 3 gives an overview of the Lowdham catchment showing the route of the Cocker Beck with primarily agricultural land to the north of its catchment and the A6097 Epperstone By-Pass along its western boundary.

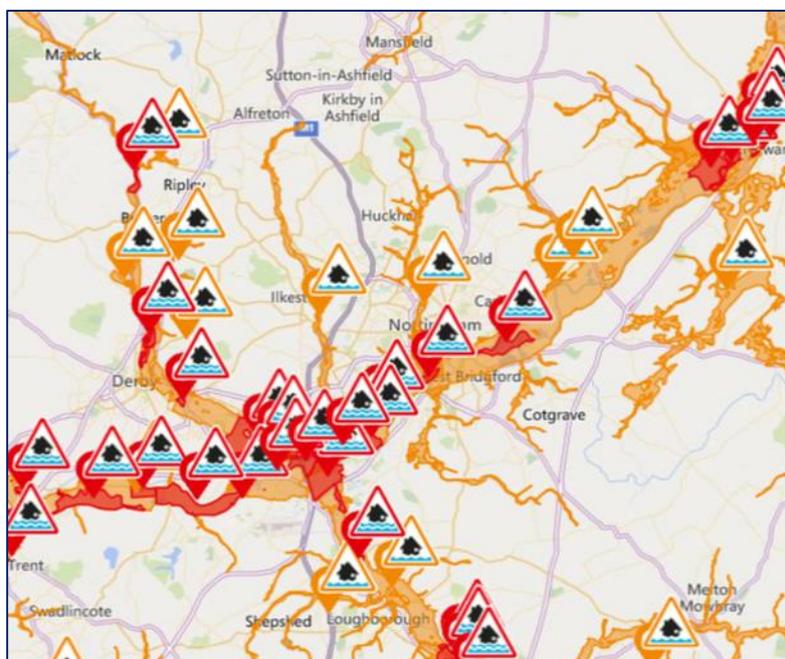


Figure 2. Flood warnings and alerts for Nottinghamshire in February 2020.

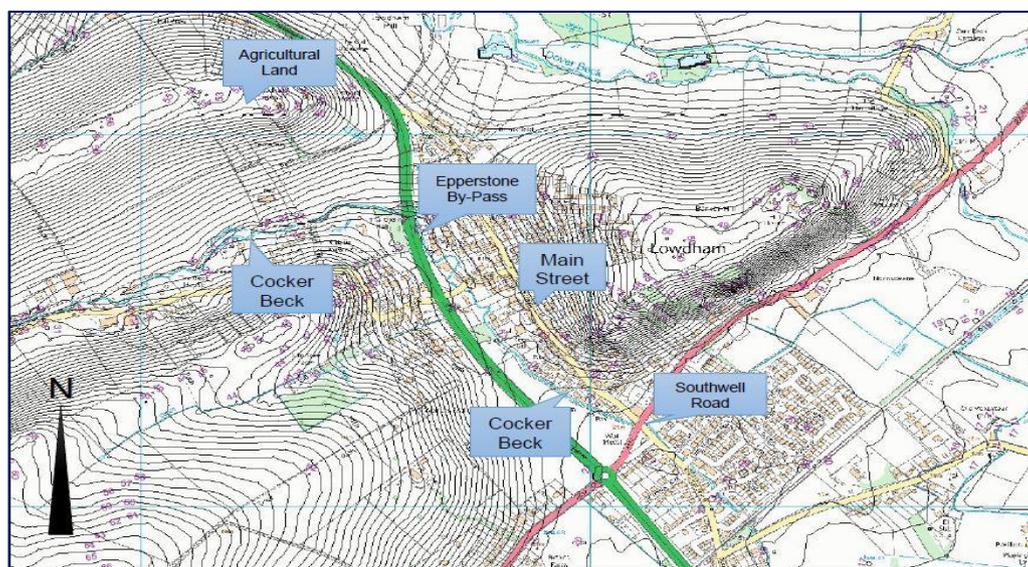


Figure 3. Lowdham Catchment Overview

During the morning of the 16th of February Lowdham was subjected to a significant amount of rainfall with 39.2mm of rain recorded as falling over a 24-hour period at the nearby Lambley rain gauge. The Lowdham Grange river gauge recorded its highest ever level of 1.54m at peak as shown on Figure 4 below. This led to parts of Lowdham suffering from

a significant flood event with 93 reported incidents of internal property flooding. There were also reports of flooding to many more gardens, curtilages and the public highway. Figure 5 highlights the areas affected by internal flooding.

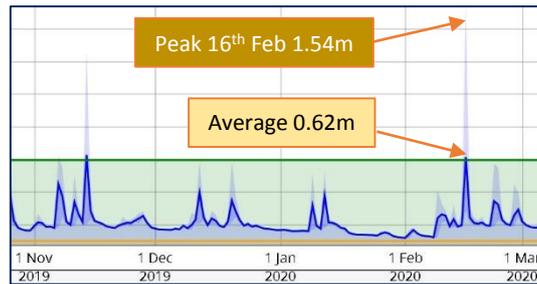


Figure 4. Graph showing record river level for the Cocker Beck on 16th Feb 2020.

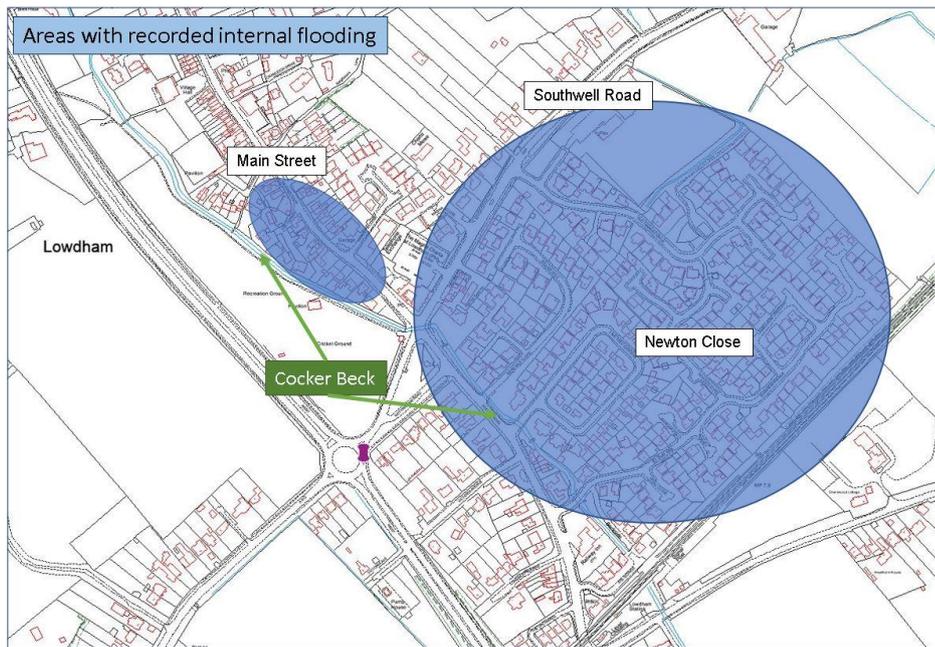


Figure 5. Plan highlighting area affected by internal flooding

Summary of flooding and its causes

- The flooding that occurred in Lowdham on the 16th of February came from a mixture of sources; river flooding from the Cocker Beck over-topping and flooding from surface water, the combination of both resulting in widespread flooding of properties, roads and open spaces across the catchment.

Lowdham has a significant history of flooding with recently recorded events in 1999, 2007, 2012, 2013 and 2019 some of which attributed flooding to similar causes as this event, including the over-topping of the Beck.

Lowdham has a steep surrounding topography with hills to the north west and east falling to create a valley which has the Cocker Beck flowing along the bottom of it. Water running off those fields feeds the Beck which runs in a southerly direction through Lowdham between the Epperstone By-Pass and Main Street.

Figures 6 & 7 below are extracts from the Environment Agency's flood risk mapping and clearly show how surface water flows and the over-topping of the Cocker Beck will impact on the catchment. The darker shading identifies areas at higher risk of flooding (more

frequent / less extreme rainfall events) and lighter shading showing the lower risk areas (less frequent / more extreme rainfall events).

Surface water that fell on the fields in the upper catchment, already saturated following the extensive amounts of rainfall that had fallen over the previous months, flowed into the Cocker Beck overwhelming it resulting in it over-topping and spilling out at points along its route.

The sheer volume of water falling on the catchment resulted in significant overland flows in the area with many of the roads including the Epperstone By-Pass and Main Street acting as channels for the water. The high levels of surface water and river water overwhelmed the existing surface water assets in the area resulting in the devastating flooding.

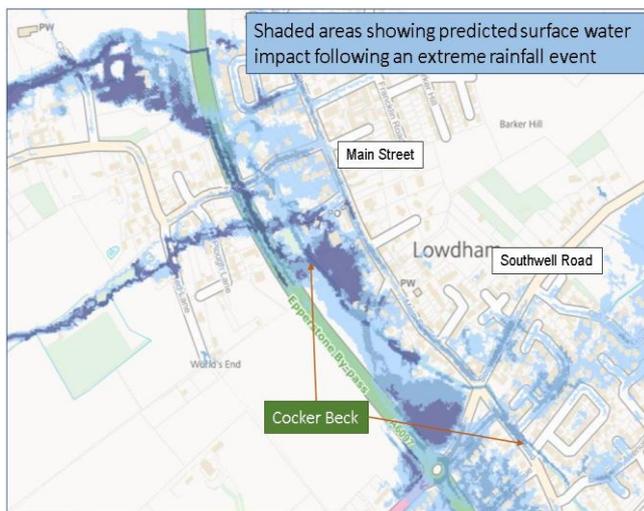


Figure 6. Surface Water risk taken from the published Surface Water Flood Risk Maps

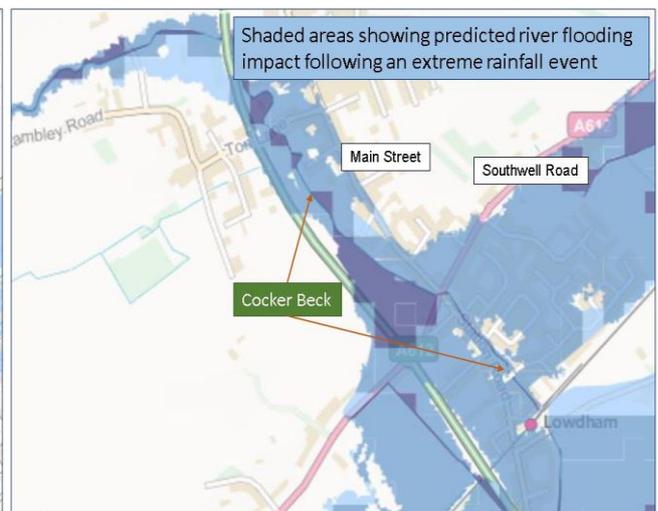


Figure 7. River risk taken from the published 'Risk of Flooding from Rivers and Sea' Maps

Other areas of Lowdham were affected by surface water alone with the Newton Close / Blenheim Avenue area severely affected by overland surface water. Figure 7 is an extract from the Environment Agency's flood risk mapping that shows areas of the estate at risk.

Highway drainage in this area is served by a surface water pumping station; the location of which is shown on Figure 8 below. Early investigations after the flooding have indicated this pumping station was operating to its design standards during the flood event.

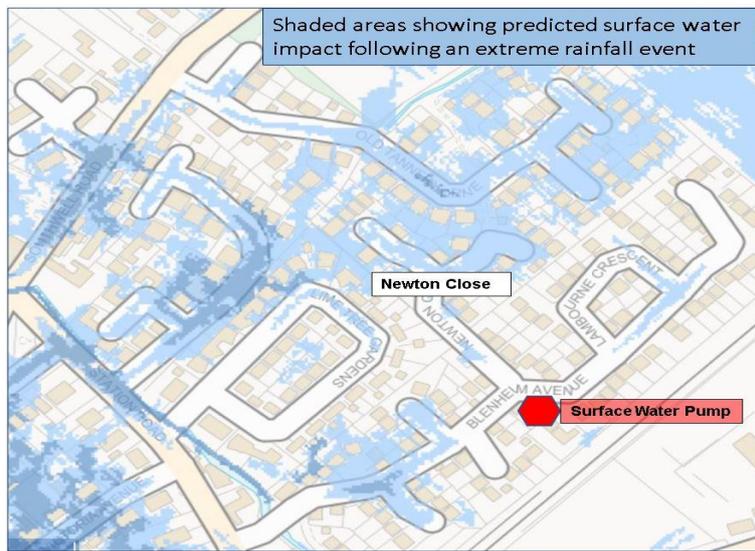


Figure 8. Extract from the Environment Agency’s flood risk mapping for the Newton Close / Blenheim Avenue area.

The evidence gathered as part of this report concludes that the flooding was due to the excessive volume of rain falling on an area that was already saturated from previous rainfall and had similarities to previous recorded events. It is hoped this information will assist and support the feasibility study being carried out by the Environment Agency referenced in paragraph 6.

Risk Management Authorities and their responsibilities

8. 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. 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.
- 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 (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. Newark and Sherwood District 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. The Environment Agency

- i. Maintenance and Management of the Cocker Beck (Main River).
- ii. 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.

11. Trent Valley Internal Drainage Board

- i. Maintenance of sections of the Cocker Beck

12. Severn Trent Water Ltd.

- i. Maintenance of the public sewage system.

Risk Management Authority Responses to Flood

13. 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) The Nottinghamshire County Council:

- i. Initiated and co-ordinated Emergency Planning procedures.
- ii. Delivered sandbags where a need was identified.
- iii. Initiated and led the Section 19 Flood Investigation.
- iv. Adult Social Care & Public Health ensured safety of vulnerable people.

14. Newark and Sherwood District Council

- i. Newark and Sherwood District Council Officers undertook a range of activities in support of the multi-agency response to, and recovery from this flood event.
- ii. Attended and maintained water courses and drainage assets based on the Council's riparian ownership in Lowdham.
- iii. Administered Flood Hardship Fund and Central Government Flood Emergency Grants to residents.

15. The Environment Agency

- 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.
- ii. Environment Agency staff operated a new drainage arrangement installed in the cricket pitch flood storage area in January 2020. This worked successfully to quickly drain flood water out of the flood storage area through gravity using a penstock once the river level in the Cocker Beck had reduced sufficiently, to create storage capacity for future rainfall events.

16. Trent Valley Internal Drainage Board

- i. Provided emergency response crews to assist in management of flooding event.

17. Severn Trent Water

- i. Provided emergency response crews to assist in management of flooding event.

Additional information and Future Actions.

18. In 2018 the EA working with the Trent Rivers Trust, Nottinghamshire County Council and local land owners began a project to install Natural Flood Management measures in the upper catchment of Lowdham. The project was funded by a £50k grant from the Department for Environment, Food and Rural Affairs Natural Flood Management Project fund. Now nearing completion, these measures are designed to hold back and store surface water running in the upper Cocker Beck catchment in Lowdham.

The Environment Agency, as lead Risk Management Authority for Main River fluvial flood risk, are carrying out a major Flood Alleviation feasibility study for the catchment with the hope of identifying economically viable proposals that will reduce the risk and consequences of future flooding events.

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.

Severn Trent Water in partnership with Nottinghamshire County Council will shortly complete a scheme that will improve the surface water and highway drainage in Southwell Road and Willow Holt areas.

Prior to this event the Environment Agency had recently carried out vegetation clearance and repair work to ensure the wall around the storage area and on Station Street are in good condition. Additionally, following the November 2019 flood event, the Environment Agency undertook drainage works on the cricket pitch to improve the speed of floodwater drainage so that it would be available again more quickly for any repeated rainfall events and subsequent flood storage need. These works included the installation of an enlarged pipe and flap valve with penstock control gate. In February 2020 the penstock was opened as the water level of the Cocker Beck started to recede, and successfully emptied the storage area within six hours. This had previously taken up to 36 hours to drain using a 6 inch pump operated on a 24/7 basis.

Nottinghamshire County Council are committed to carry out a survey of the private drainage network and pump system on Blenheim Avenue to prove its operational condition and interaction with Lowdham's wider surface water drainage.

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 communities to identify ways of proactively reducing the risk, likelihood and consequences of future flooding events.