

APPENDIX A

SECTION 19 REPORT – KIMBERLEY – SEPTEMBER 2019

Introduction

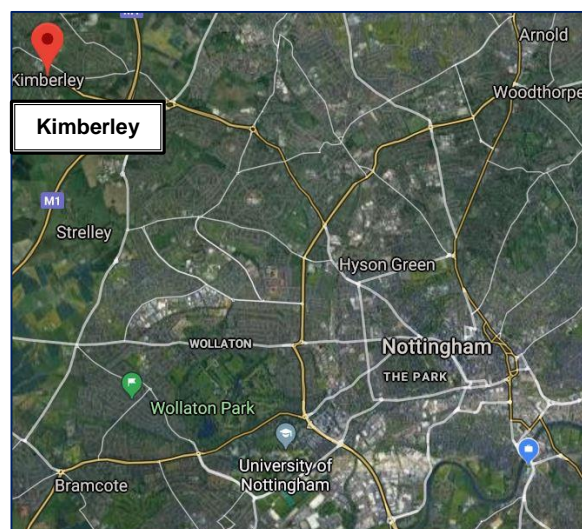
Section 19 of the Flood and Water Management Act 2010 states:

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. The objective of this report is to investigate which Risk Management Authorities had relevant flood risk management functions during the flooding in September 2019 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.), Severn Trent Water (STW) and Broxtowe Borough Council (BBC).
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. Kimberley is a town and civil parish in Nottinghamshire, it lies 6 miles northwest of the Nottingham city boundary along the A610. The ward to which Kimberley is part has an approximate population of 6,500 people recorded in the 2011 census.

Figure 1. Location Plan



On the morning of the 24th of September 2019 at around 10 am in the morning and following a prolonged period of heavy rainfall, parts of Kimberley were subject to significant flood water. 7 Businesses were subject to internal flooding and many more struggled with keeping flood water out of their property. Those businesses affected were situated along the Main Street and adjacent to the low point on Eastwood Road.

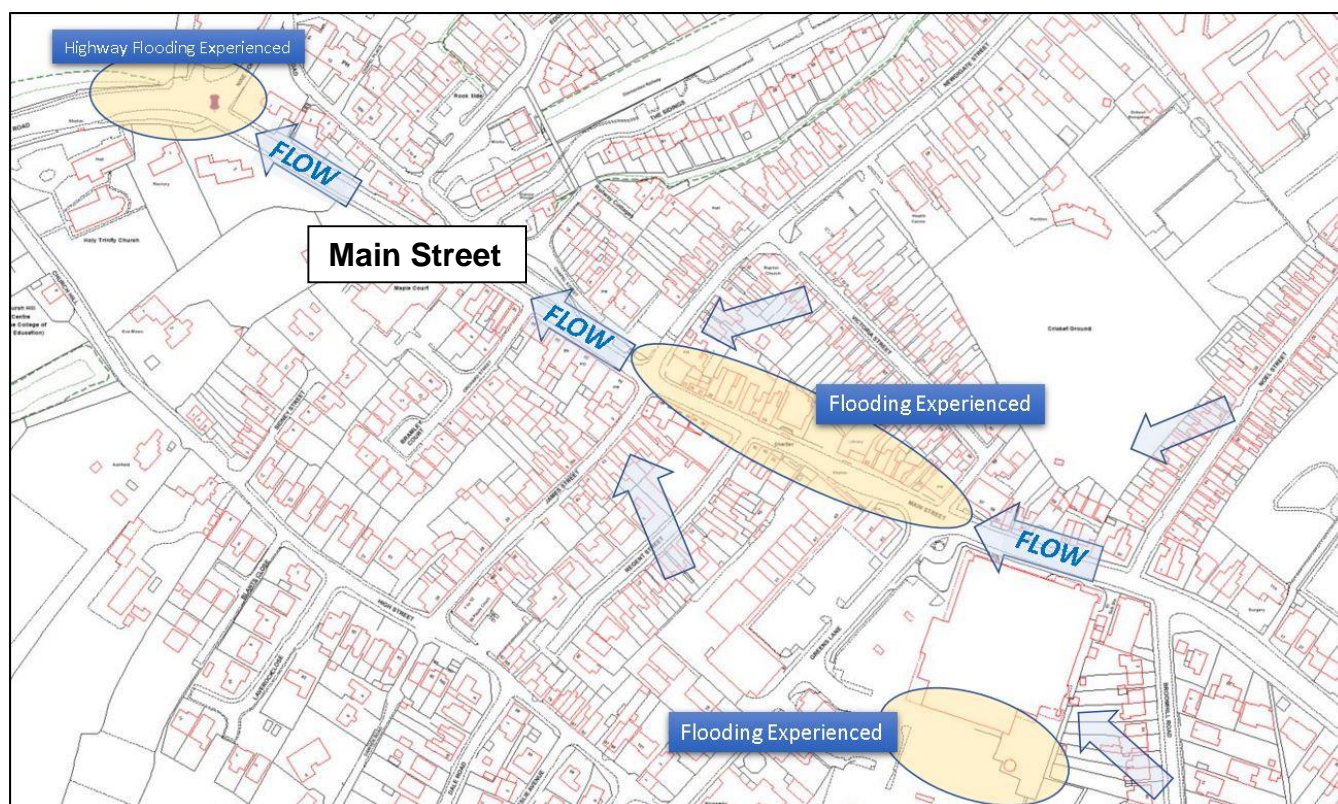


Figure 2. Plan highlighting area affected by internal flooding

Summary of flooding and its causes

7. Between 08:00am and 11:00am on the 24th of September 2019, 28mm of rain fell on the Kimberley area, the average rainfall for the month of September as recorded at the nearby Met Office rain gauge at Watnall was 58mm, highlighted in figure 3 below. The resulting impact of almost half a month's rain falling in 3 hours was that 7 businesses were internally flooded.

NOTTINGHAMSHIRE SITES HOURLY RAINFALL DATA (mm) 24 SEPT 0600-1800hrs GMT												
OB DATE/TIME	CALVERTON MOOR LANE	GRINGLEY- ON-THE- HILL	HIGH MARNHAM	LAMBLEY P STA, NO.2	LANGAR NO 2	MANTON W WKS	NOTTINGHAM WATNALL	STAYTHORPE	SUTTON BONINGTON	SUTTON-IN- ASHFIELD S WKS	WARSOP	WISETON
24/09/2019 06:00	0	0	0	0	0	0	0	0	0	0	0	0
24/09/2019 07:00	0	1.6	0	0	0	0	0.4	0	0.8	0.2	0.2	2.6
24/09/2019 08:00	2	0	0.2	1.6	2.2	0.8	2.2	1.2	1	4.6	0	0
24/09/2019 09:00	2	3.6	3	2.4	1.4	7	1.4	3	0.8	3.6	3.8	2.4
24/09/2019 10:00	2.2	1.6	2.6	3.2	3.8	3.8	10.2	3.4	4.6	5.4	7	1.8
24/09/2019 11:00	1.2	11.4	13	2.4	1	4.4	14.2	1.8	4	8.4	2	7
24/09/2019 12:00	0.4	9.8	0	0.4	0	1	1.4	0	0.6	3	1.2	2
24/09/2019 13:00	0	0	0	0.2	0	0.2	0.6	0	1.4	1.6	0.6	0
24/09/2019 14:00	0.2	0.2	0.6	0.4	0.6	0.2	0.2	0	0.4	1.2	0.2	0
24/09/2019 15:00	5	0	0.2	2.2	0.6	0	5.8	2.2	0.8	0.8	0	0.2
24/09/2019 16:00	0.6	0.2	0	0.6	0.6	0	0.4	0.6	0.2	0.2	0.2	0
24/09/2019 17:00	0	0	0	0	0.2	0.2	0	0	0	0	0	0
24/09/2019 18:00	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	13.6	28.4	19.6	13.4	10.4	17.6	36.8	12.2	14.6	29	15.2	16

SITE	SEPT MEAN RAIN
SUTTON BONINGTON	51.0
NOTTINGHAM, WATNALL	58.6
GRINGLEY-ON-THE-HILL	59.8

Figure 3. Met Office rainfall data, Watnall gauge highlighted

This intense 3-hour downpour fell on a built-up urbanised area with a valley shaped topography and mainly impermeable surface.

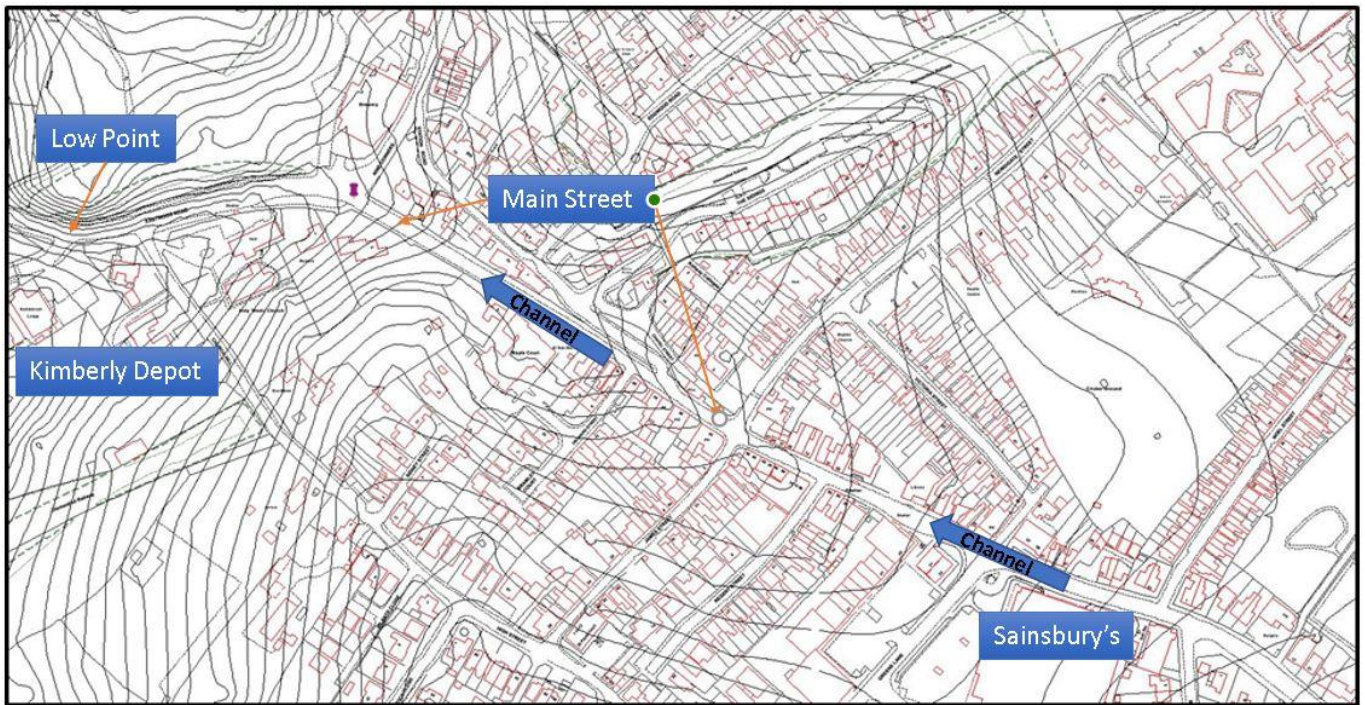


Figure 3. Plan showing valley topography

Once rain water landed it quickly flowed over the impermeable surface of the highway, down the valley sides using the side streets, to the bottom of the valley which is Main Street. Main Street then acted as a channel easing the flow of water to the low point on Eastwood Road.

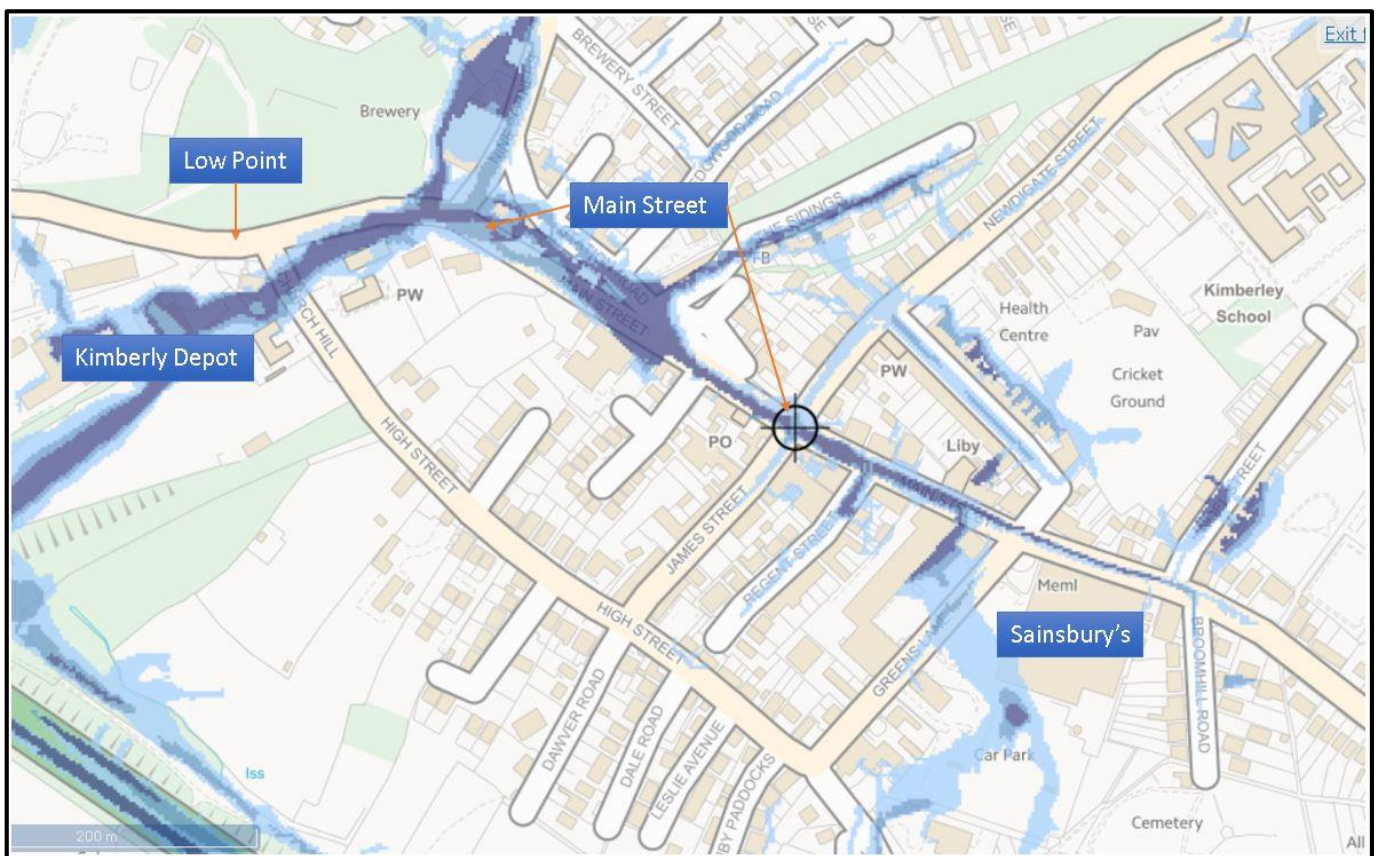


Figure 4. Plan showing surface water flow routes

The drainage for the car park to the rear of Sainsbury's reached capacity because of the amount of rain water on the surface and from water flowing from an area behind, this led to flooding into the rear of the building. Other manholes were observed to be lifting in rear gardens and on side roads because smaller drains connecting to the public surface water and combined sewers were struggling to cope.

All of this meant more rain water on the roads; as the surface water started to flow quickly over the surface of the roads many highway gully's were bypassed by the speed of that water.

The steep topography and linear make up of the Main Street, highlighted by the photo to the right, meant that surface water flowed very quickly often running over the gully's. The low kerbs and areas with drop kerbs allowed water to run onto the footpaths and ultimately into any business entrances with low thresholds.



Photo 1. Main Street Kimberley

As previously mentioned, Main Street acts as a channel for surface water in extreme downpour events. This surface water then collects and ponds at a low point on Eastwood Road. The photo to the right shows the depth of ponding which was deep enough to leave some vehicles stranded. There was also sufficient amounts of water to flood the adjacent Broxtowe Borough Council Depot.



Photo 2. Low point junction of Church Hill

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 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 (Nottinghamshire County Council/Via East Midlands Ltd.)

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

9. Broxtowe 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 Ltd.

- i. Maintenance of the public sewerage system
- ii. Provide site-based presence and investigations following the event

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. Provided Highways response team to divert traffic around Eastwood Road.
- iii. Working in partnership with Severn Trent Water to survey the Surface Water sewer network.
- iv. Initiated and led the Section19 Flood Investigation.

b) Severn Trent Water Ltd:

- i. Provided site-based presence and investigations following the event.
- ii. Instigated on site CCTV work to survey sewer condition.
- iii. Actively engaged in Section19 Flood Investigation.

c) Broxtowe Borough Council

- i. Provided emergency response support in management of flooding event.
- ii. Actively engaged in the Section19 Flood Investigation.

Additional information and Future Actions

12. All the Risk Management Authorities involved in this event are committed to continuing the investigations into the causes of this incident. Over the coming months Nottinghamshire County Council working with Severn Trent Water will look at the complex interaction between the Highway Drainage system and the Public Sewer system between the Main Street and Eastwood Road area. It is hoped this work will highlight potential actions which will help lower the risk of flooding in the future.

Following a similar but less severe event in 2013, Severn Trent Water commissioned some work to survey the public surface water and combined sewer system. This survey work led to a section of the combined sewer being relined between Newdigate Street and Nine Corners.

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 at no cost to the community, should there be sufficient volunteer interest from the community. Further information on these services are available on Nottinghamshire County Council's website.

Nottinghamshire County Councils Growth and Economic Development Team working with The Growth Hub, may be able to offer assistance and advice to businesses affected by this event in Kimberley if requested.

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.