

## Flooding on Somme Road and Lens Road

This document has been prepared by residents of Somme Road in reaction to Amber Valley Borough Council's change in core strategy with proposed housing development on Land West of Kedleston Road (AVBC/2013/0010).

The report identifies specific flooding incidents witnessed by residents on Somme Road whilst demonstrating concerns with an increasing water table. Incidents are reported in chronological order with supporting evidence plotted on satellite maps of the area.

### The History of Somme Road

Somme Road is located in a valley and sits closely to the Markeaton Brook (see figure 1). Historically, the road had only 6 original dwellings, which were spread across the site with large areas of land around. The land around Somme Road was predominantly boggy land with bad drainage and many areas prone to standing water.



Figure 1

Over the years, land on Somme Road had been split into plots and sold off individually where residents had the chance to self build. Many of the 6 original properties were extensively extended, refurbished or demolished and rebuilt. A flood survey was conducted on the site and planning permission was granted for a maximum of 16 individual dwellings, including the rebuild/remodel of the existing properties. This was subject to flood remedial measures such as improved drainage ditches, retaining walls and raised footings.

### History of Flooding 2000-2001

Periods of torrential downpours in Autumn 2000 and Spring 2001 saw extensive flooding to Somme Road and surrounding areas along the Markeaton Brook. Already waterlogged ground and extensive expanses of accumulated water caused extensive flooding on Somme Road as the brook burst its banks in various places mainly due to the Kedleston Hall riparian ownership failing to maintain banks and clear out trees. This resulted in breakout water trying to

take a new course. See images below taken from periods from September to November 2000:



Position A on map 001



Position B on map 001



Position C on map 001



Position D on map 001



Position E on map 001



Position F on map 001





Position G on map 001



Position H on map 001



Position I on map 001



Position J on map 001





Position K on map 001



Position L on map 001



Position M on map 001



Position N on map 001a



Position O on map 001a



Position P on map 001a





Position Q on map 001a



Position R on map 001a



Position S on map 001a



Position T on map 001a



Position U on map 001a



Position V on map 001a



Position W on map 001a



Position X on map 001a













MAP 001a



### To Summarise - 2000-2001

It is evident that major flooding during this period was caused as the Brook broke its banks after failing to take the excess water making its way down from further up stream. Run off water from Land West of Kedleston Road, also caused problems where the ditch leading to the brook could not take the excess water. Although Somme Road itself was pretty much under water, the flooding did not make its way into any homes as the downpours stopped just in time. However, Somme Road was left saturated for a considerable amount of time as water was still making its way through the brook from surrounding areas, coupled with the fact the land on Somme Road is so close to the water table itself. Similar incidents were witnessed throughout the winter as the brook broke its banks on numerous occasions and repairs had to be made;- ie removing fallen trees, debris from the Kedleston Hall riparian ownership.

### History of Flooding May – June 2001

In May 2001, residents witnessed similar scenes of flooding where heavy peak intensity downpours caused the brook to break its banks yet again. Run off water from the field west of Kedleston Road again caused flooding as the ditch couldn't take this peak intensity excess water. See images below:



Position A on map 002



Position B on map 002



Position C on map 002



Position D on map 002







### To Summarise - June 2001

Again, residents were victims of fear as Somme Road flooded once again. Luckily water didn't make its way into homes, however gardens were yet again saturated from many days. It was clear to residents that the Brook could not cope with increased global warming and increased peak intensity rain fall events and was vulnerable to breaking out of its banks. It was at this point residents took action to protect their homes by raising bank levels. Residents also hired Keeling Chambers to conduct a flood risk assessment on the road **(see Appendix 1)**. And remedial measures implemented

### History between 2002- 2005

Although residents hadn't experienced scenes similar to Autumn 2001, the same typical waterlogging and surplus run off water issues were reoccurring. Water table levels were monitored by Duncan Robinson (3 Somme Road) who had recorded increased levels year on year, however water table levels reduced considerably during summer months. See images below:



Position A on map 003 (typical areas of standing water on various occasions)



Position B on map 003 (typical areas of standing water on various occasions)



Water monitoring well- Position C on map 003





### History from 2005- 2011

This period saw the commencement of development at Somme Road, involving construction of new dwellings and the raising of plots to protect new houses from raising water table levels and potential flooding. Again, water table levels had increased during the winter months year on year, and standing water issues continued.

Individual plot owners experienced issues with high water table levels as they excavated foundations; builders were forced to pump excess water out of foundations and away from the site before concrete could be poured.

### Flood Prevention

As home owners of Somme Road began to develop their homes they also began to implement flood prevention measures to help protect their property. Riparian owners along the brook course raised the banks and cleared any excess brambles and tress, which could impact the flow of the brook (See images below). Residents on the East of Somme Road cleared the ditch to the east of the plots which carries run off water from the Land West of Kedleston Road. This requires on going access across the planned development site for maintenance of the main ditch.

Regular maintenance takes place to keep these areas clear to avoid situations as seen in Autumn 2001.

Many new build developments have installed sustainable development systems (SUDs) such as rainwater harvesters to reduce the run off water levels during downpours, this water is then filtered and recycled for use around the home.

All in all, residents of Somme Road finance thousands of pounds between them to maintain water flow around Somme Road, and actively protect their properties from peak intensity rainfall.



Typical images of raised banks to the West of Somme Road



Typical images of Banks raised to the West of Somme Roa



Typical images of raised banks to the West of Somme Road



Typical Images of raised banks to the West of Somme Roa



### Flooding History November 2011

Despite residents taking action to prevent further flooding, Somme Road was again hit by flood waters as the brook burst its banks on 25<sup>th</sup> November 2011. Periods of peak intensity rainfall put further pressure on already saturated land in and around Somme Road and also along the brook course. This being exacerbated by the large catchment area of this brook system See images below:



Position A on map 004



Position B on map 004



Position C on map 004



Position D on map 004



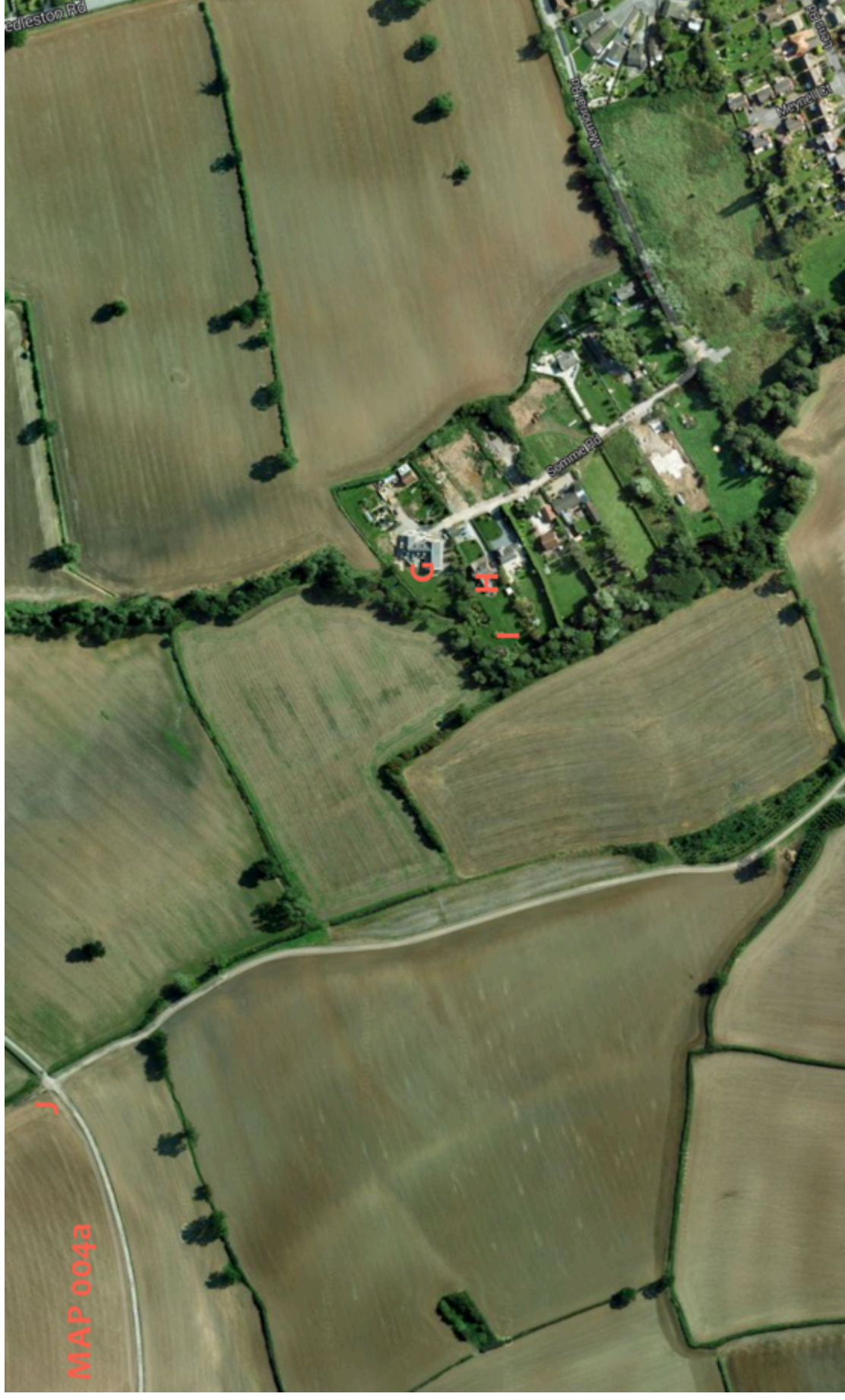
Position E on map 004



<b>Video G</b> at position G on map 004a	<b>Video H</b> at position H on map 004a	
<b>Video I</b> at position I on map 004a	<b>Video J</b> at position J on map 004a	
<b>Videos can be viewed at:</b> <a href="https://www.dropbox.com/sh/f5t6d42tx7e6ye5/AACC0I1gY5_tqaAB-ZjC9Igga?dl=0">https://www.dropbox.com/sh/f5t6d42tx7e6ye5/AACC0I1gY5_tqaAB-ZjC9Igga?dl=0</a>		









### To Summarise - November 2011

Somme Road residents were again victims of flooding. Luckily flood water did not reach residents homes as the rainfall stopped just in time. Any further rain and Pressure of run off water would have increased flood levels, putting properties at risk. Water table levels were recorded at 6 inches from road level during this period of wet weather. Although remedial work had been carried out to avoid future flooding, floodwater yet again managed to make its way through Somme Road. It is evident that the ever-increasing water table is leaving residents and the brook vulnerable to peak intensity rainfall events and surface runoff entering sewers from Allestree and Quarndon.

### Flooding History July 2012

Less than 7 months later residents of Somme Road, Lens Road and other areas along the brook were victims of further flooding. The typical scenario reoccurred as increased rainfall forced to brook to break its banks in various places. See images below:



Position A on map 005



Position B on map 005



Position C on map 005



Position D on map 005a





Position E on map 005a



Position F on map 005a



Position G on map 005a



Position H on map 005a



Position I on map 005a



Position J on map 005a

**Video K** at position K on map 005

**Video L** at Position L on map 005

**Video M** at Position M on map 005



Videos can be viewed at:

[https://www.dropbox.com/sh/f5t6d42tx7e6ye5/AACC0I1gY5\\_tqaAB-ZjC9Igga?dl=0](https://www.dropbox.com/sh/f5t6d42tx7e6ye5/AACC0I1gY5_tqaAB-ZjC9Igga?dl=0)









### To Summarise - July 2012

After a lapse of less than 7 months Somme Road and Lens Road residents were again victims of flooding. Luckily for Somme Road residents flood water did not reach residents homes. Any further peak intensity rainfall events and pressure of surface run off water would have increased flood levels, putting properties at risk. Water table levels were recorded at 9-12 inches from road level during this period of wet weather. It is evident that torrential downpours, run off water and increasing water table are leaving residents along the brook very vulnerable.

### General impact of new dwellings on existing dwellings

As part of planning conditions of Somme Road developments, new build houses were required to increase ground levels above the road level, improve drainage ditches and build retaining walls to protect dwellings from flooding. This has had impact on existing dwellings, as water tends to accumulate on lower plots of land. Some residents on existing plots tend to experience standing water on lawns and driveways, which can accumulate into vast amounts of water during long spells of rainfall. See images below:



Position A on map 006 (taken 10<sup>th</sup> Aug 2014)



Position B on map 006 (taken 10<sup>th</sup> Aug 2014)





Position C on map 006 (taken 10<sup>th</sup> Aug 2014)





## Water Table

Development of individual plots has been an ongoing process since 2005, with many plots yet to be built. Each year water table levels have increased during winter months and have seen to reach 6 inches below road level. Before development works took place prior to 2005, water table levels would drop considerably during summer months to around 28 inches below road level. However results from the Somme Road water table monitoring well (position C on map 003) suggest that since development has taken place, summer water table levels are increasing year on year. Rainfall over this summer (2014) has been noticeably lower than the past two years, however water table levels on 10<sup>th</sup> August 2014 were reported at 18 inches below road level, which is quite alarming.

It could be argued that increased hydraulic pressure from the new substantial dwellings on Somme road has caused water table levels to increase around the area. This theory is supported as summer water table levels are seen to be increasing year on year even though rainfall has been quite low of summer 2014.

## Residents' Concerns to the further Development on Land West of Kedleston Road

- Our research suggests that pressure from pumping concrete foundations into floodplain land has caused water table to increase.
- If development was allowed to go ahead, it is clear that further downward pressure would take place, causing a further increase in water table. This will reduce the ability of the land close to the brook being able to hold water to the level currently existing.
- Further, the hard surfaced areas would increase run off water towards the ditch east of Somme Road and ultimately into the brook. It's clear significant rainfall would put huge pressure on brook holding capacity.
- Pollution could also enter this 'red listed' section of brook course killing white clawed crayfish and kingfishers
- It is clear that this development, despite the suggested mitigation, would significantly increase the risk of flooding to the houses in Somme Road, and by association the houses further downstream, particularly in Lens and Ypres Road.
- We require continued access to the ditch across this development site to maintain our flood remedial works (The ditch East of Somme Road)
- We would like to see and agree the results of any hydraulic, surface water and ground water surveys so that our properties are not impacted on and put at risk from flooding etc.