

Market Harborough, Town Centre

Flood Report

To discuss the flood report contact the Flood Risk Management Team by
e-mail: flooding@leics.gov.uk or phone 0116 305 0001

DETAILED FLOOD INVESTIGATION

Investigation Ref.:	2013-015
Investigation:	Market Harborough, Town Centre
Date of Flooding:	27th July 2013
Revision	FINAL REPORT

Officer:	J.McGuinness	Senior Engineer	5/3/14
Checked:	D. Rawle	Team Manager	5/3/14
Approved:	N.Rowe	Group Manager	5/3/14

**Environment and Transport Department,
Technical Services Group,
County Hall,
Glenfield,
Leicester.
LE3 8RJ.**



CONTENTS

PAGE NO.

1.	Executive summary	2
2.	Introduction	3
3.	Site background	5
4.	Flooding incident	7
5.	Summary of impacts and findings	9
6.	Responsibilities	11
7.	Conclusion	14
8.	Recommendations	15
9.	Useful Links	16

Appendix A – Site Location Plan

Appendix B – Lidar/catchment plan

Appendix C – Flood Map for Surface Water (FMfSW)

Appendix D –Main River Map

Appendix E – Levels for River Welland

Appendix F – Historic Map

Appendix G – EA Standard Notice

Appendix H – Questionnaire



1 EXECUTIVE SUMMARY

1.1 STATUTORY CONTEXT

Section 19 of the Flood and Water Management Act 2010 (FWMA) states that, on becoming aware of a flood which meets certain predetermined criteria, the LLFA (lead local flood authority) must undertake a formal flood investigation in order to determine the relevant flood risk management authorities involved and which flood risk management actions have been (or should be) taken to mitigate future flood risk. Where an authority carries out an investigation, it must publish the results.

1.2 It was deemed necessary to complete a formal investigation into the flooding incident at Market Harborough on the 27th July 2013. A number of properties were flooded internally, and the source of the flooding was initially not clear and reported to be from multiple sources.

1.3 CAUSE OF FLOODING

Over the course of the investigation, it became clear that the flooding in the 'town centre' of Market Harborough was a direct result of the intense rainfall that fell within the catchment. This exceeded the design capacity of the 'public sewer' and caused surface water and combined sewer systems within the town centre to surcharge.

1.4 MAIN FINDING

The design capacity of the 'public sewer' was exceeded which caused surface, foul and combined systems within the town centre to surcharge and flood in excess of 50 properties.

The flooding was not related to the River Welland and there were no significant blockages in either the public sewer or highway drains that would have caused the internal flooding of properties.



2 INTRODUCTION

2.1 LEAD LOCAL FLOOD AUTHORITY INVESTIGATION

Section 19 of the FWMA states:

- (1) On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers necessary or appropriate, investigate:
 - (a) which risk management authorities have relevant flood risk management functions, and
 - (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), it must -
 - (a) publish the results of its investigation, and
 - (b) notify any relevant risk management authorities

2.2 FLOOD INVESTIGATION CRITERIA

A formal investigation will be carried out if one or more of the following occurs after a flooding event:

- Loss of life or serious injury
- Critical infrastructure flooded or nearly flooded from unknown or multiple sources
- Internal property flooding from unknown or multiple sources

In the following circumstances, discretion may be used to investigate a flooding incident:

- A number of properties have been flooded or nearly flooded
- Other infrastructure flooded
- Repeated instances
- Investigation requested
- Risk to health (foul water)
- Environmental or ecologically important site affected
- Depth/area/velocity of flooding a cause for concern

2.3 RISK MANAGEMENT AUTHORITIES

The following risk management authorities were identified as relevant to the flooding within Market Harborough:

- Leicestershire County Council – Lead local flood authority
- Leicestershire County Council – Local highway authority
- Environment Agency – Anglian Northern Area
- Harborough District Council
- Anglian Water Services

2.4 NON-RISK MANAGEMENT AUTHORITIES

The following agencies are not prescribed as risk management authorities (RMAs). However, they have a significant involvement in flood risk management:

- Leicester, Leicestershire and Rutland Local Resilience Forum
- Leicestershire Police
- Leicestershire Fire and Rescue Service

2.5 FLOODING INCIDENT

It was considered appropriate to complete a formal investigation into the flooding incident at Market Harborough on the 27th July 2013 since at least one property was flooded internally, and the source of the flooding was initially not clear and reported to be from multiple sources.



3 SITE BACKGROUND

3.1 LOCATION

Market Harborough is situated in the south east of Leicestershire, approximately 16 miles from Leicester (Location Plan, Appendix A)

Market Harborough is situated on hills and valleys falling towards the River Welland. The River Welland runs from west to east and effectively bisects the town (north and south). The town centre is located on the northern side of the River Welland. The River Welland is classified as a 'Main River' which means that the Environment Agency has permissive powers to undertake work to reduce flood risk

The town centre is located within Flood Zone 1 of the Environment Agency Main River flood map. The Environment Agency defines Zone 1 as a location '*where flooding from rivers and the sea is very unlikely. There is less than a 0.1 per cent (1 in 1000) chance of river flooding occurring each year*'.

3.2 DRAINAGE SYSTEMS

There is only a single watercourse within Market Harborough town centre and this is the River Welland.

The town centre is served by both a combined and dedicated storm public sewer system. This system is maintained by Anglian Water as the relevant water and statutory sewerage authority. The responsibility for lateral connections onto the main sewer varies and can either be the responsibility of the adjacent landowner or water company (Anglian Water). Further guidance on this is contained within the 'Useful Contacts' section of this report.

The public sewer network across England and Wales (and particularly in historic towns such as Market Harborough) has evolved rather than been designed. Currently, new public sewers are designed to a document "Sewers for Adoption" which is in its 7th edition. This document along with other regulations requires sewers to be designed for a 1 in 30 year storm event.

For this reason, Anglian Water installed an attenuation tank in 2005 to retain storm water and provide a 1:30 year level of protection to the town centre (broadly around The Square). These improvement works do not, however, manage to provide the standard level of protection to all properties on Coventry Road. Anglian Water (as an interim measure) has provided property level protection to those properties that were not afforded protection by the installation of the attenuation tank to the 1:30 year standard. Where flooding has occurred below this threshold, Anglian Water is obliged to investigate and where necessary increase the capacity of its sewer to the 1:30 year standard.



The local highway authority is responsible for maintaining highway gullies (drains) and the lateral connections to the public sewer. This is indicated by figure 1 below:

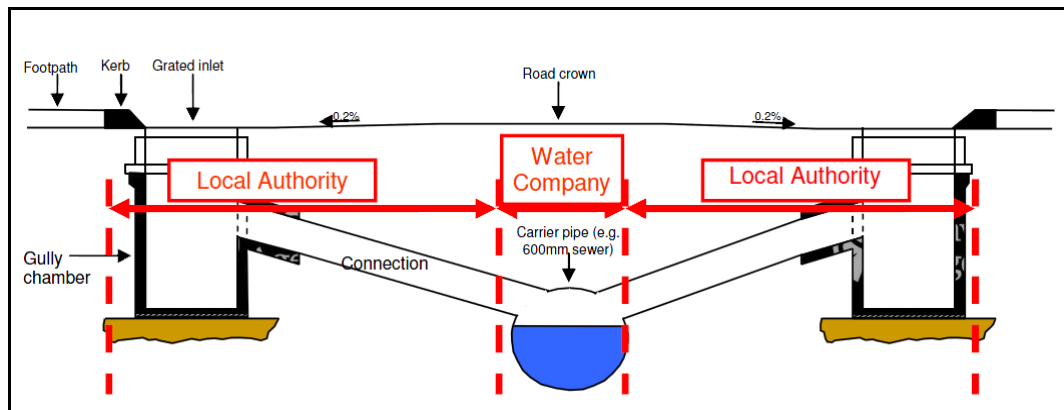
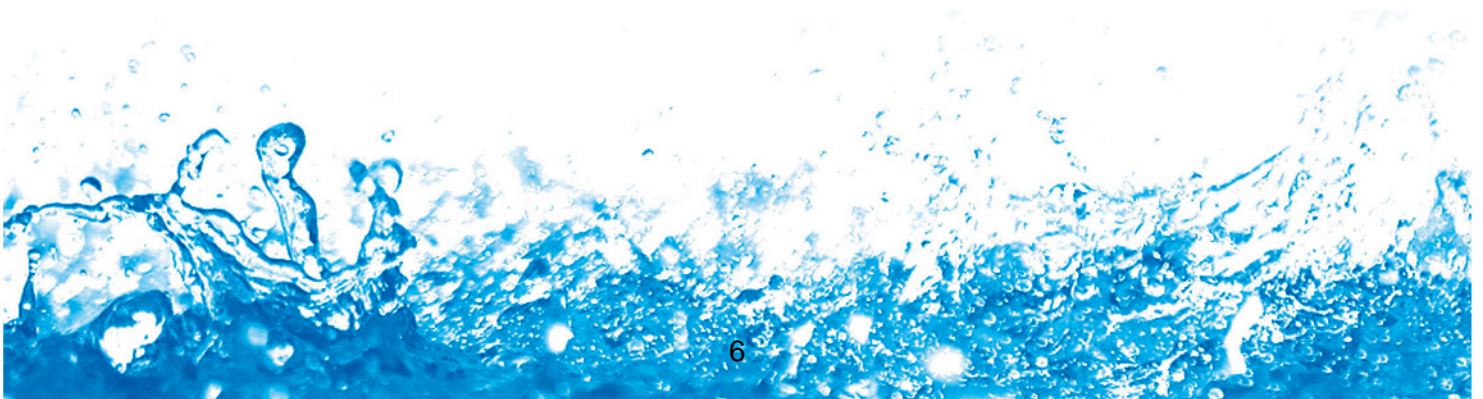


Figure 1: Highway Drainage Responsibilities



4 FLOODING INCIDENT

4.1 PREVIOUS FLOODING INCIDENTS

The County Council has gained a great deal of information from a questionnaire that was sent out to affected residents and business owners within the town centre (see Appendix H). This has helped the County Council and partner agencies identify a number of previous incidents in which the town centre has suffered flooding.

The following flood dates have been identified by communities, businesses and risk management authorities and from internet sources:

- 1958
- Summer 2000
- Summer 2008
- Summer 2012

4.2 FLOOD INCIDENT

On the night of the Saturday 27th July (and early hours of Sunday 28th July), a significant number of properties reported flooding within the town centre of Market Harborough.

On Saturday 27th July leading up to the flooding incident, the County Council and other risk management authorities received weather warnings from the Flood Forecasting Centre (FFC). The FFC is a partnership between the Environment Agency and the Met Office, combining meteorology and hydrology expertise. The centre forecasts for all natural forms of flooding: river; surface water; tidal; and groundwater.

Prior to the incident, the County Council received a yellow warning at 10.30hours and 1600 hours and a further warning was issued at 23.45 hours, following the flooding incident.

On all three alerts, Leicestershire was classified as 'Yellow' risk. Yellow indicates there is a low likelihood of significant disruption from river and surface water flooding. The warnings did, however, indicate there was a risk of localised heavy rainfall

4.3 RAINFALL ANALYSIS

The Hydrological Summary produced by the Centre for Ecology and Hydrology for July 2013 stated that 'the intensity of much of the late July rainfall overwhelmed local drainage capacities in some areas; flash flooding was common and transport disruption common'.

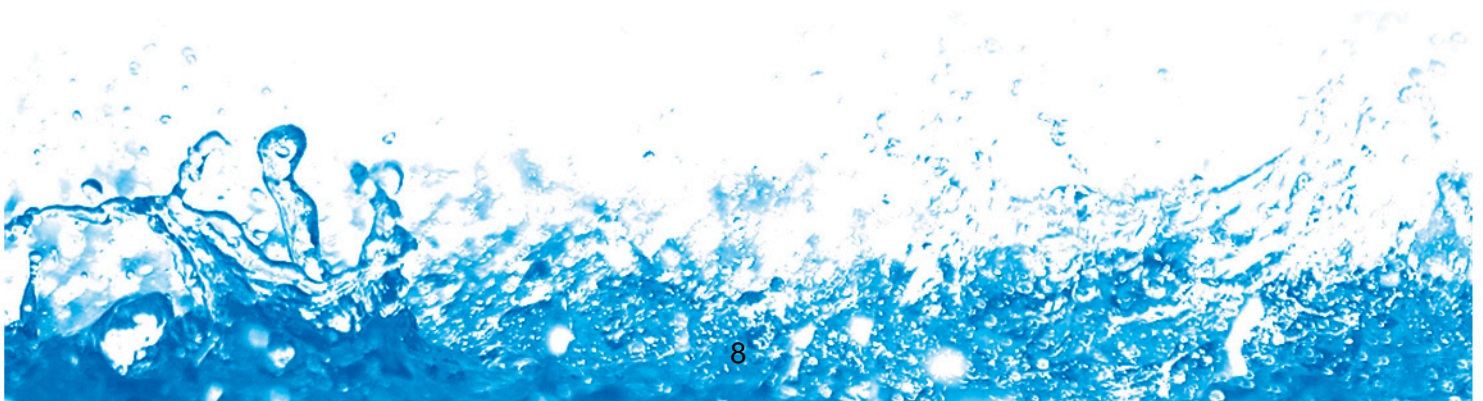


The Environment Agency has provided the rainfall data from the 4 closest weather stations. The rainfall data suggests that approximately 60mm fell over Market Harborough within a 24 period over the 27th and 28th July 2013. This amount of rainfall is very significant and the intensity very concentrated with 31mm and 48.6mm being reported within a 1 hour period at the Husbands Bosworth and Kibworth weather stations respectively. This is illustrated in Table 1 below.

Table 1: Rainfall Data 27th/28th July 2013

Weather Station	15min Rolling Total	1hr Rolling	24hr Rolling Total
Dingley	9.8mm	24.8mm @ 20:00	32.2mm
Husbands Bosworth	30mm	48.6mm @ 20:00	63.6mm
Kibworth	19.2mm	31mm @ 20:00	57.8mm
Great Oxenden	12.6mm	21.2mm @ 20:00	33.2mm

A rolling total indicates the maximum amount of rainfall recorded within a given time period. The data above is an indication of the maximum rainfall recorded during a 15 minute, 1 hour and 24 hour period using data from the 27th and 28th July 2013



5 SUMMARY OF IMPACTS AND FINDINGS

5.1 IMPACTS

People and property were affected by the flooding as a result of the significant rainfall. The County Council sent out questionnaires to many of the residents within the town centre to establish and further quantify the physical effects of the flooding incident.

This questionnaire identified that over 50 properties suffered flooding. These properties are believed to comprise of both residential dwellings and businesses. The questionnaire also identified that those properties fitted with property level protection did not suffer internal flooding. Those properties that deployed sandbags were not effective and ultimately suffered flooding.

The questionnaire also identified that the flooding was typically at a level up to 25cm although some properties reported much deeper flooding (those with cellars).

5.2 PUBLIC SEWER

Following the flood incident, Anglian Water both checked its sewer records and completed on-site surveys - there have been no reported defects within its system.

On the 27th July, the attenuation tank located within the Commons Car Park was filled from empty in the space of a little over two hours. The tank has a capacity close to three million litres of water. Once the rain had stopped, the levels in the tank began to drop and, by mid-afternoon on Sunday 28th July, the tank was empty. The tank functioned as designed and provided the specified level of protection

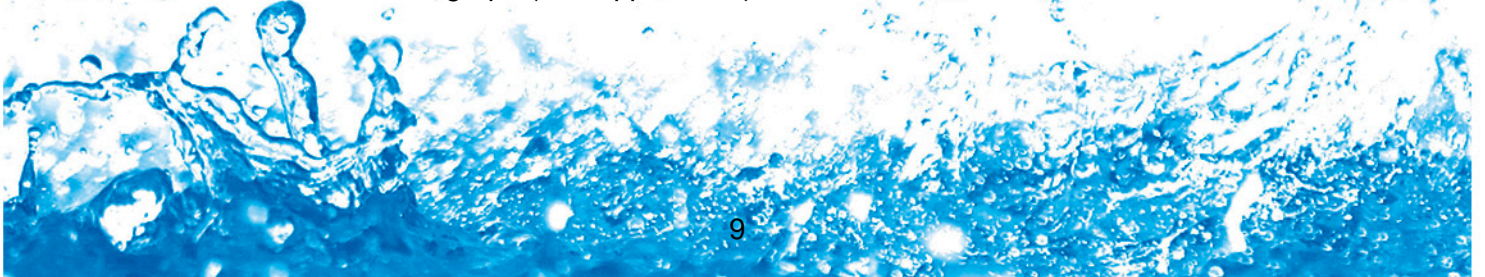
5.3 HIGHWAY DRAINS

The highway drains within Market Harborough are considered to have performed exactly as designed. A number of residents reported that water was surcharging from the road drains during the incident. It is concluded that any surcharging was due to a lack of capacity within the public sewer rather than any blockage. In the weeks following the incident, the County Council lowered two gullies in the town centre. This has improved their function but would not have prevented any flooding from taking place.

The County Council has completed calculations to check whether there are sufficient gullies within the town centre. A survey was carried out and calculations indicate that there are 20 road drains over and above the current design requirement. The County Council designs road drainage in accordance with the 6 C's Design Guide which reflects the water industry standard of a 1:30 year level of protection.

5.4 RIVER WELLAND

The Environment Agency has supplied a graph showing the level of River Welland on the 27th and 28th July. At no point during the flooding incident did river levels reach the threshold for a flood alert or flood warning. The river levels peaked at 8pm on Saturday 27th July, as indicated on the enclosed graph (see Appendix E)



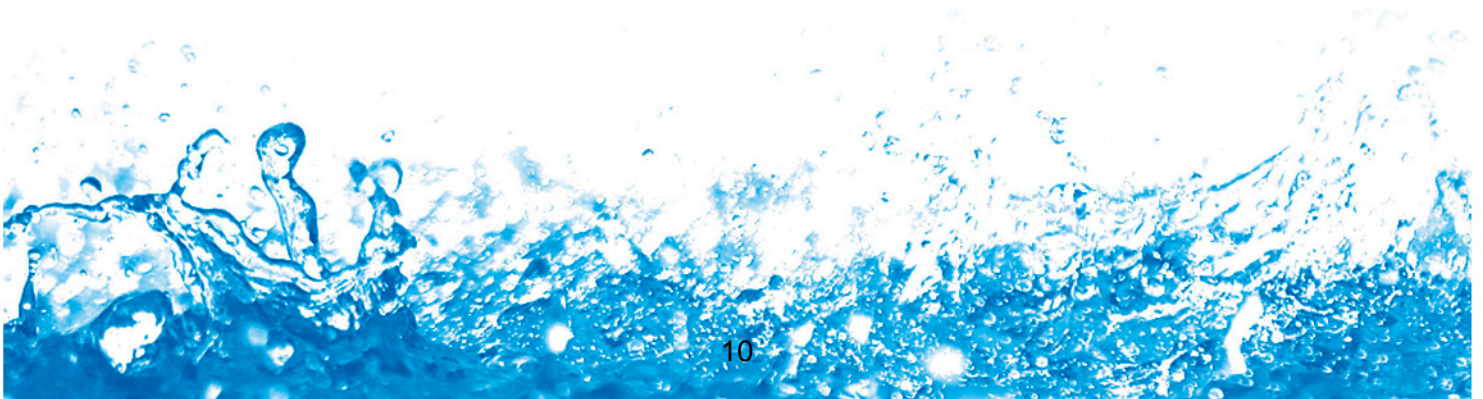
5.5 EXTENT OF FLOODING

The extent of the flooding is broadly reflective of the low lying areas indicated by both LIDAR mapping (Appendix B) and the Flood Map for Surface Water (Appendix D).

Aerial LIDAR uses a laser to measure the distance between a survey aircraft and the ground surface, including buildings and other assets (above ground pipelines, highways, street furniture, power lines, railway tracks). This data is represented in a LIDAR Plan that shows the topography of the town centre.

The Environment Agency's Flood Map for Surface Water shows areas where surface water would be expected to flow or pond. The areas at risk of flooding are displayed in two bands showing:

- (a) surface water flooding (100mm) and
- (b) areas of deeper surface water flooding (300mm).



6 RESPONSIBILITIES

6.1 LEAD LOCAL FLOOD AUTHORITY (LCC)

As stated within the introduction section, the County Council as the LLFA has a responsibility to investigate flood incidents under Section 19 of the FWMA.

The LLFA also has a responsibility to maintain a register of assets which have a significant effect on flooding from surface runoff, groundwater or ordinary watercourse, as detailed within Section 21 of the FWMA. The register must contain a record about each structure or feature, including the ownership and state of repair.

Whilst the County Council can suggest possible causes of flooding in Leicestershire and make recommendations to ensure flood risk is mitigated as far as possible, the FWMA does not provide the County Council with the mandate or funding to tackle all identified causes of flooding.

The County Council also has powers to serve notice on individuals, requiring them to maintain the flow of ordinary watercourses in accordance with Section 25 of the Land Drainage Act 1991 (LDA)

6.2 HARBOROUGH DISTRICT COUNCIL

HDC has powers under Section 14 of the LDA to undertake flood risk management works on ordinary watercourses (non-Main River), where deemed necessary. Under Section 20 of the LDA, HDC has the powers to (by agreement of any person and at their expense) undertake drainage work which that person is entitled to carry out and maintain.

6.3 ENVIRONMENT AGENCY

The Environment Agency has a strategic overview responsibility under the FWMA as well as permissive powers to carry out maintenance work on Main Rivers under Section 165 of the Water Resources Act (WRA). Main River means all watercourses shown on the statutory Main River maps held by the Environment Agency and the Department of Environment, Food and Rural Affairs, and can include any structure or appliance for controlling or regulating the flow of water into, in or out of the channel.

The Environment Agency has permissive powers to carry out works of maintenance and improvement on these rivers. These powers can be used to undertake works to reduce flood risk where landowners fail to undertake their responsibilities under the WRA.

The Environment Agency can undertake enforcement action where third party asset owners fail to maintain their property/land in appropriate condition. They may consider undertaking maintenance or repair of third party assets in order to safeguard the public interest and where other options are not appropriate.

6.4 HIGHWAY AUTHORITY (LCC)

LCC, in its role as local highway authority, has a duty to maintain the highway under Section 41 of the Highway Act 1980. Section 100 of the Highways Act 1980 also gives the power to prevent water running on to a highway. Further information on the Highways Act 1980 is available via the link identified within the Useful Links section of this report.

6.5 WATER COMPANY (ANGLIAN WATER)

Water and sewerage companies are responsible for managing the risks of flooding from surface water, foul water or combined sewer systems. Public sewers are designed to protect properties from the risk of flooding in normal wet weather conditions. However, in extreme weather conditions, there is a risk that sewer systems can become overwhelmed and result in sewer flooding.

Since October 2011, under the 'Private Sewer Transfer', Water Companies are required to adopt piped systems on private land that serve more than one curtilage and were connected to a public sewer on or prior to 1st July 2011. Statutory sewerage undertakers have a duty under Section 94 of the Water Industry Act 1991 to provide sewers for the drainage of buildings and associated paved areas within property boundaries.

Water companies are responsible for public sewers and lateral drains. A public sewer is a conduit, normally a pipe that is vested in a water and sewerage company (or predecessor thereof) that drains two or more properties and conveys foul, surface water or combined sewage from one point to another point and discharges via a positive outfall. There is no automatic right of connection for other sources of drainage to the public sewer network. Connection is therefore discretionary, following an application to connect.

6.6 RIPARIAN LANDOWNERS OF WATERCOURSES

As detailed within the EA document 'Living on the Edge', riparian landowners have certain rights and responsibilities, including the following:

- they must maintain the bed and banks of their watercourse, and also the trees and shrubs growing on the banks;
- they must clear any debris, even if it did not originate from their land. This debris may be natural or man-made;
- they must keep any structures that they own clear of debris. These structures include culverts, trash screens, weirs and mill gates.

The following link provides further information:

<http://www.environment-agency.gov.uk/homeandleisure/floods/31626.aspx>.

6.7 RESIDENTS, TENNANTS AND BUSINESSES

Market Harborough residents, tenants and businesses who are aware that they are at risk of flooding should take action to ensure that they and their properties are protected.

Community resilience is important in providing information and support to each other if flooding is anticipated. Actions taken can include signing up to Flood Warning Direct (if available), nominating a community flood warden, producing a community flood plan implementing property level protection and moving valuable items to higher ground, to more permanent measures such as installing floodgates, raising electrical sockets and fitting non-return valves on pipes. LCC and the EA can provide advice on these matters and more information can be found at:



6.8 COMPLIANCE

There is no evidence to suggest that any of the risk management authorities or stakeholders listed above did not comply with either internal policy or any legal duties



7 **CONCLUSIONS**

The flooding that occurred within Market Harborough town centre is a result of the intense rainfall that fell over a short period of time. Existing drainage systems were unable to cope with the deluge of water, causing the water to surcharge out of road drains and manholes. This resulted in sewer and surface water flowing into low lying areas around the square and adjacent roads, subsequently flooding properties.

In the event of drainage system being overwhelmed, there are only a small number of properties on Coventry Road that have been fitted with a property level protection system.

The River Welland was not the source of the flooding within the town centre and it also considered not to have restricted any sewer outfall as it remained relatively low during the entire incident.



8 RECOMMENDATIONS

8.1 ANGLIAN WATER

Anglian Water will be completing a scheme in 2014 on Coventry Road in Market Harborough to provide a 1:30 year level of protection to those properties not currently afforded this standard of protection.

Although this scheme will be targeted towards properties located on Coventry Road, (Leicestershire County Council (in its LLFA role), encourages Anglian Water to look at achieving wider benefits. It must be noted that all water companies are regulated by OFWAT (The Water Services Regulation Authority), and any scheme completed would need to be within their operational constraints.

8.2 LEAD LOCAL FLOOD AUTHORITY (LCC)

The County Council should approach the Anglian Northern Regional Flood and Coastal Committee (RFFCC) for funding to assess the feasibility of property level protection for those properties that are most at risk and suffered flooding during July 2013. The County Council should therefore work with Anglian Water to establish those properties that are most at risk and are not currently afforded property level protection

8.3 LOCAL HIGHWAY AUTHORITY (LCC)

The County Council should continue to undertake regular drainage cleansing throughout the town centre and respond to reports of blockages.

8.4 LOCAL RESILIENCE FORUM & HARBOROUGH DISTRICT COUNCIL

The LRF should consider arranging a flood fair within Market Harborough town centre so that all communities within the Harborough area can find out about their flood risk and what actions they can take to protect themselves or their businesses.



9 **USEFUL LINKS**

9.1 **ENVIRONMENT AGENCY**

General enquiries 03708 506 506 (Mon-Fri, 8am – 6pm)
Incident hotline 0800 80 70 60 (free phone, 24hours)

9.2 **ANGLIAN WATER**

General enquiries 08457 91 91 55 (Mon-Fri, 8am – 8pm, Saturday 9am – 1pm)
Emergencies 08457 145 145 (24hours)

9.3 **LEICESTERSHIRE COUNTY COUNCIL**

Highways 0116 305 0001 (24hours)

9.4 **LEICESTERSHIRE COUNTY COUNCIL**

Lead local flood authority 0116 305 0001 (Mon-Fri, 9am – 5pm)
Email: flooding@leics.gov.uk

9.5 **HARBOROUGH DISTRICT COUNCIL**

Customer Services 01858 82 82 82 (24hours)
Email customer.services@harborough.gov.uk

9.6 **USEFUL LINKS**

OFWAT Guidance on sewers

http://www.ofwat.gov.uk/consumerissues/rightsresponsibilities/sewers/prs_web_sewertransfer

Environment Agency:

<http://www.environment-agency.gov.uk/homeandleisure/>

Harborough District Council Website:

<http://www.harborough.gov.uk/>

Leicestershire County Council Flood Risk Team:

<http://www.leics.gov.uk/flooding>

Local Resilience Forum:

<http://www.localresilienceforum.org.uk/>

Land Drainage Act 1991:

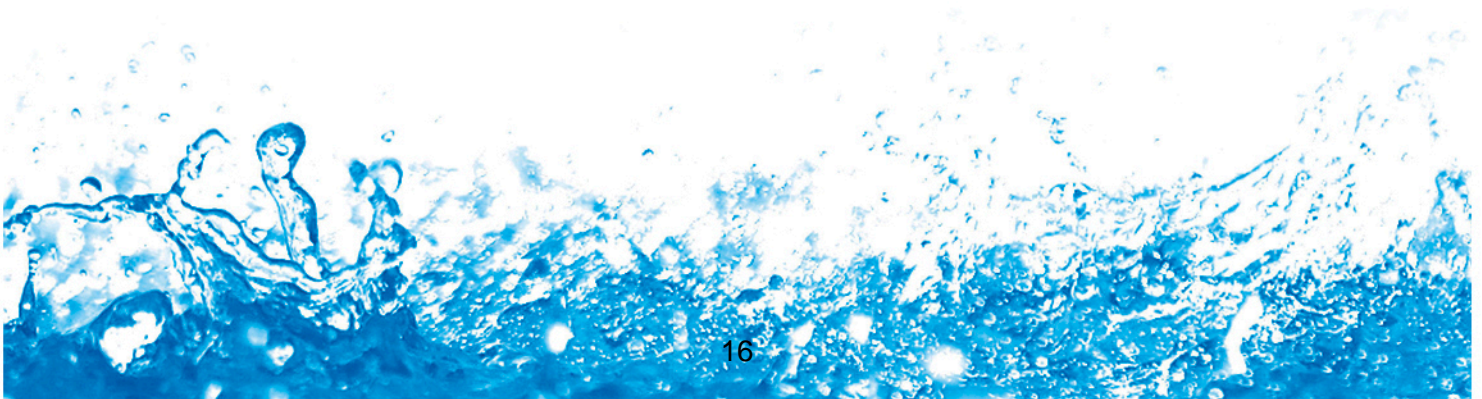
<http://www.legislation.gov.uk/ukpga/1991/59/contents>

Water Resources Act 1991:

<http://www.legislation.gov.uk/ukpga/1991/57/contents>

Highways Act 1980:

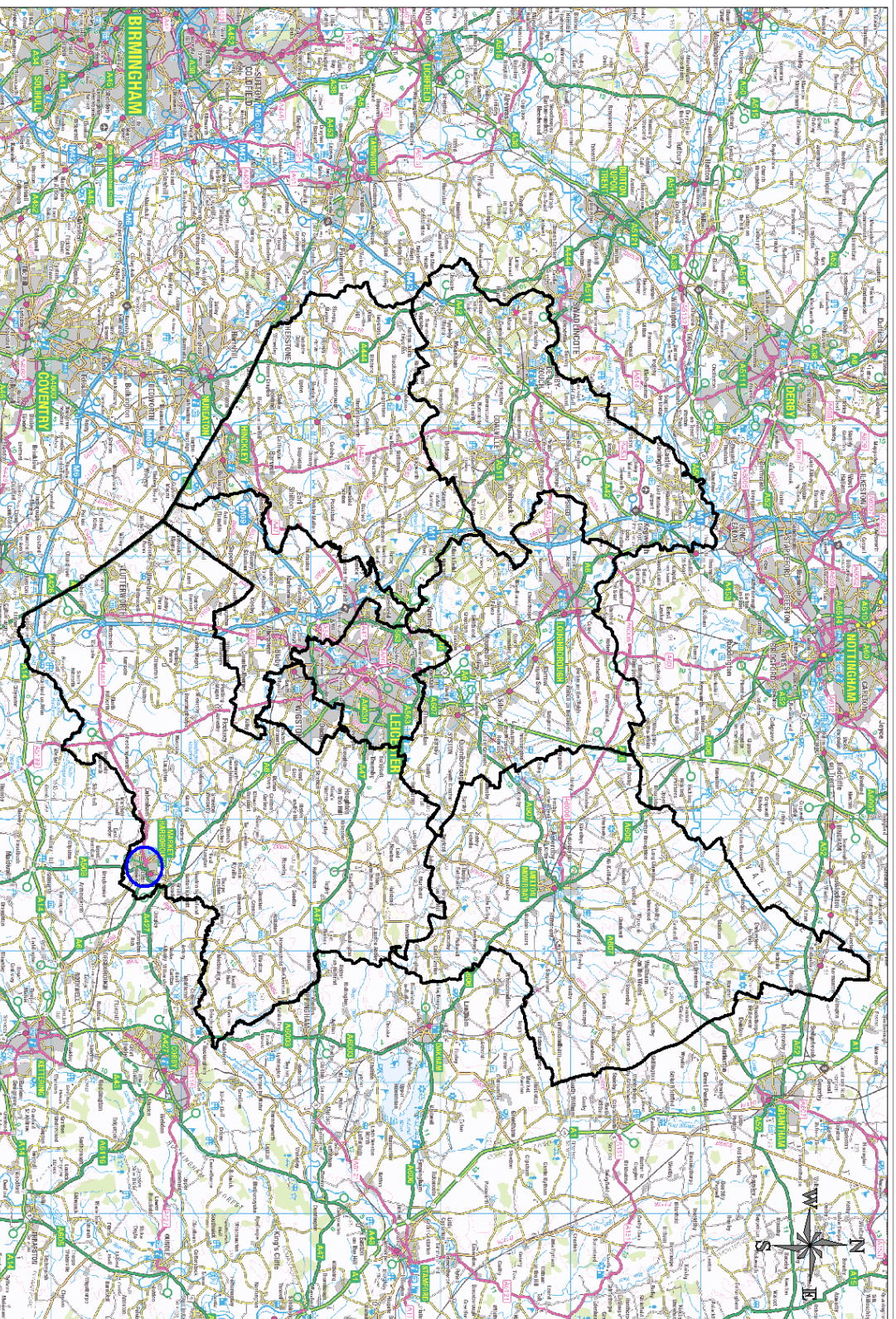
<http://www.legislation.gov.uk/ukpga/1980/66>



APPENDIX A

SITE LOCATION PLAN





This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office @ Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Leicestershire County Council. LA100019271. Published 2013.

This is not a definitive record, but is based on the best available information and is given without warranty. If roadside ditches are present, the normal presumption is that these do not generally form part of the publicly maintainable highway. This plan has been produced in relation to the specified area of enquiry and should not be used for any other purpose, since its accuracy can not be guaranteed.

This map gives an indication of the broad areas likely to be at risk of surface water flooding. It is not suitable for use as an individual property scale due to the method used.



Leicestershire
County Council

ENVIRONMENT AND TRANSPORT
DEPARTMENT

ON BEHALF OF THE
DIRECTOR

LEICESTERSHIRE COUNTY COUNCIL
ENVIRONMENT AND TRANSPORT

SERVICE:
LEAD LOCAL FLOOD AUTHORITY

TITLE:
Location Plan For
Market Harborough

LOCATION:
MARKET HARBOUROUGH TOWN CENTRE

DRAWING NUMBER	SCALE
2013-INV-015-L	Not To Scale

CREATED BY: Chris Bramley

DATE:

APPROVED BY: Daniel Rawle

SIZE: A4

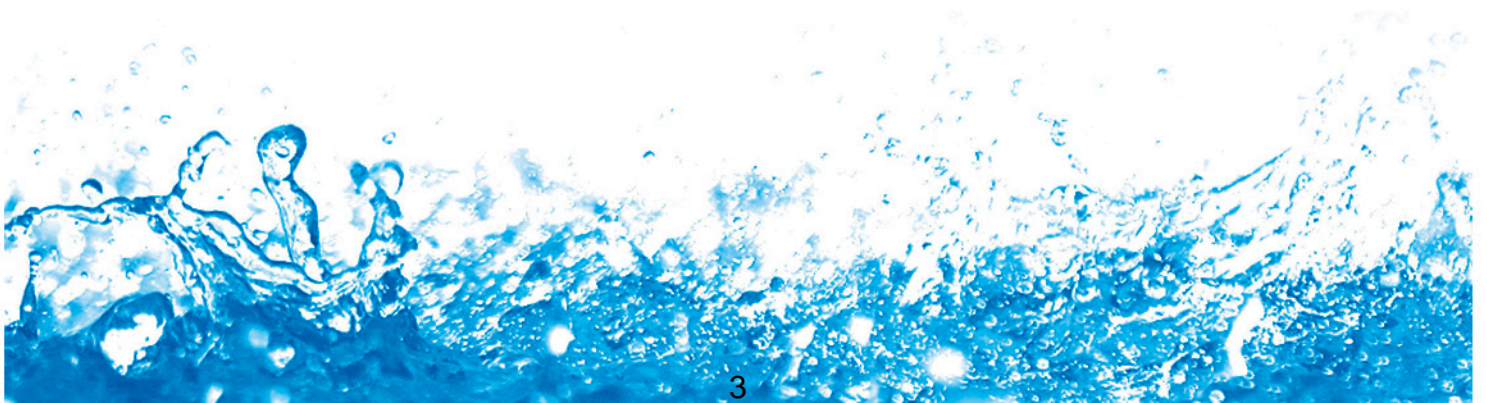
E-MAIL: flooding@leics.gov.uk

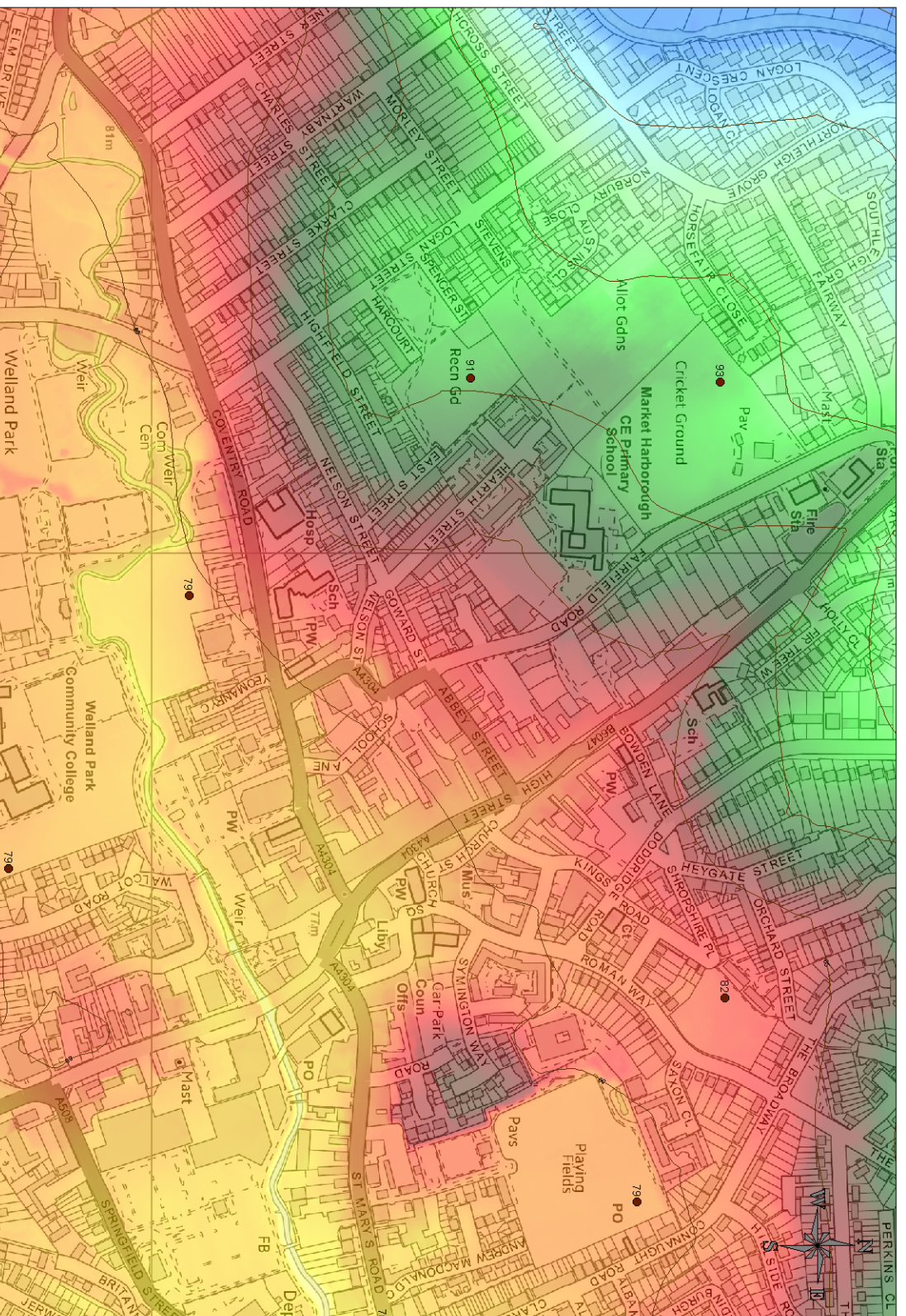
PHONE: 0116 305 0001

COUNTY HALL · GLENFIELD · LEICESTER · LE3 8RU

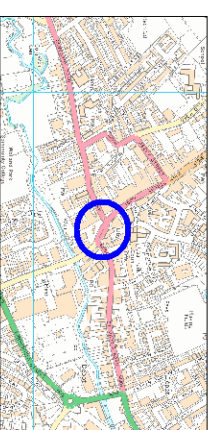
APPENDIX B

LIDAR PLAN





Location Map



Key

Lidar Levels

- 118
- 115
- 112
- 109
- 106
- 103
- 100
- 97
- 94
- 91
- 88
- 85
- 82
- 79
- 76
- 73

LEICESTERSHIRE COUNTY COUNCIL
ENVIRONMENT AND TRANSPORT

SERVICE:
LEAD LOCAL FLOOD AUTHORITY

TITLE:
Lidar mapping for
Market Harborough

LOCATION:
THE SQUARE, MARKET HARBOROUGH

DRAWING NUMBER
SCALE

2013-Inv-015-04
Not To Scale

CREATED BY: Chris Bramley
DATE: 06/09/13

APPROVED BY: Daniel Rawle
SIZE: A4

E-MAIL: flooding@leics.gov.uk

PHONE: 0116 305 0001

COUNTY HALL · GLENFIELD · LEICESTER · LE3 8RU

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Leicestershire County Council. LA100019271. Published 2013.

This is not a definitive record, but is based on the best available information and is given without warranty. If roadside ditches are present, the normal presumption is that these do not generally form part of the publicly maintainable highway. This plan has been produced in relation to the specified area of enquiry and should not be used for any other purpose, since its accuracy can not be guaranteed.

This map gives an indication of the broad areas likely to be at risk of surface water flooding. It is not suitable for use as an individual property scale due to the method used.



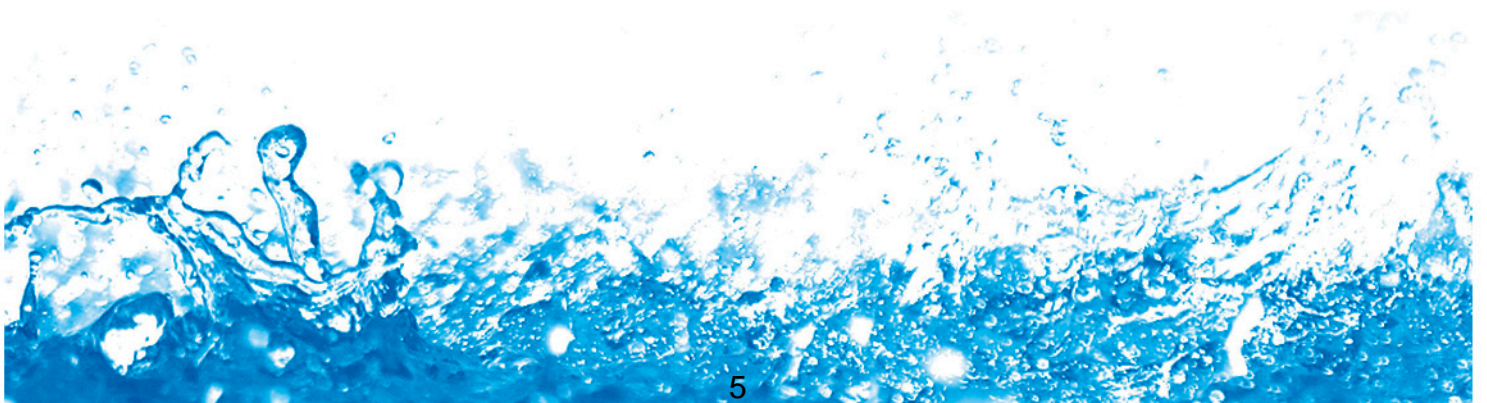
ENVIRONMENT AND TRANSPORT

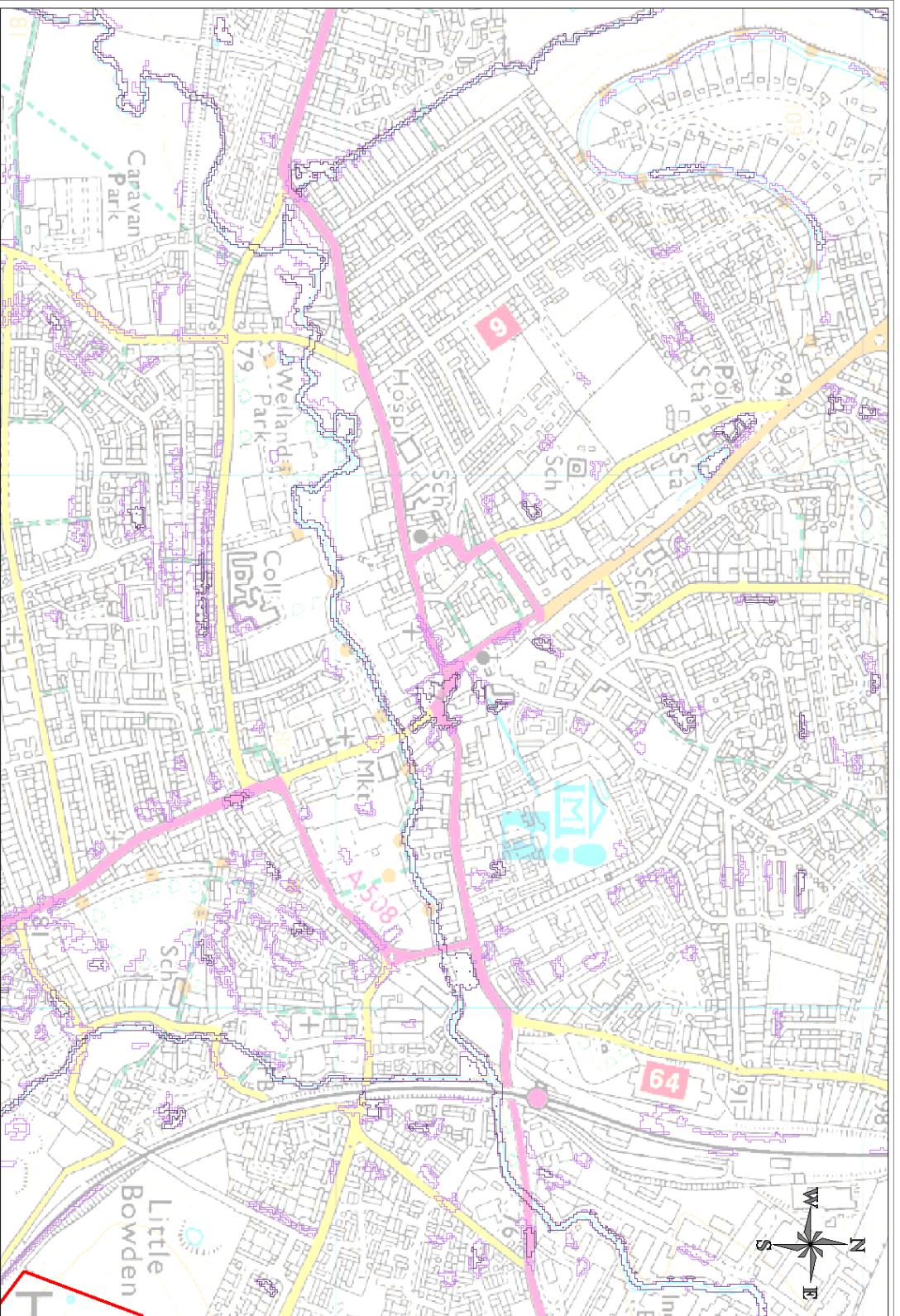
DEPARTMENT

ON BEHALF OF THE
DIRECTOR

APPENDIX C

FLOOD MAP FOR SURFACE WATER (FMfSW)







This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office
 © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Leicestershire County Council.
 LA100019271. Published 2013.

This is not a definitive record, but is based on the best available information and is given without warranty. If roadside ditches are present, the normal presumption is that these do not generally form part of the publicly maintainable highway. This plan has been produced in relation to the specified area of enquiry and should not be used for any other purpose, since its accuracy can not be guaranteed.

This map gives an indication of the broad areas likely to be at risk of surface water flooding. It is not suitable for use at an individual property scale due to the method used.

Key:

1 in 30 Year Flood Map

-  Surface Water
-  Surface Water Deep

NOTES:
1. N/A



ENVIRONMENT AND TRANSPORT
 DEPARTMENT
 ON BEHALF OF THE
 DIRECTOR

LEICESTERSHIRE COUNTY COUNCIL
 ENVIRONMENT AND TRANSPORT
 SERVICE:
 LEAD LOCAL FLOOD AUTHORITY

TITLE:
 1 in 30 Year Flood Map for
 The Square

LOCATION:

THE SQUARE, MARKET HARBOROUGH

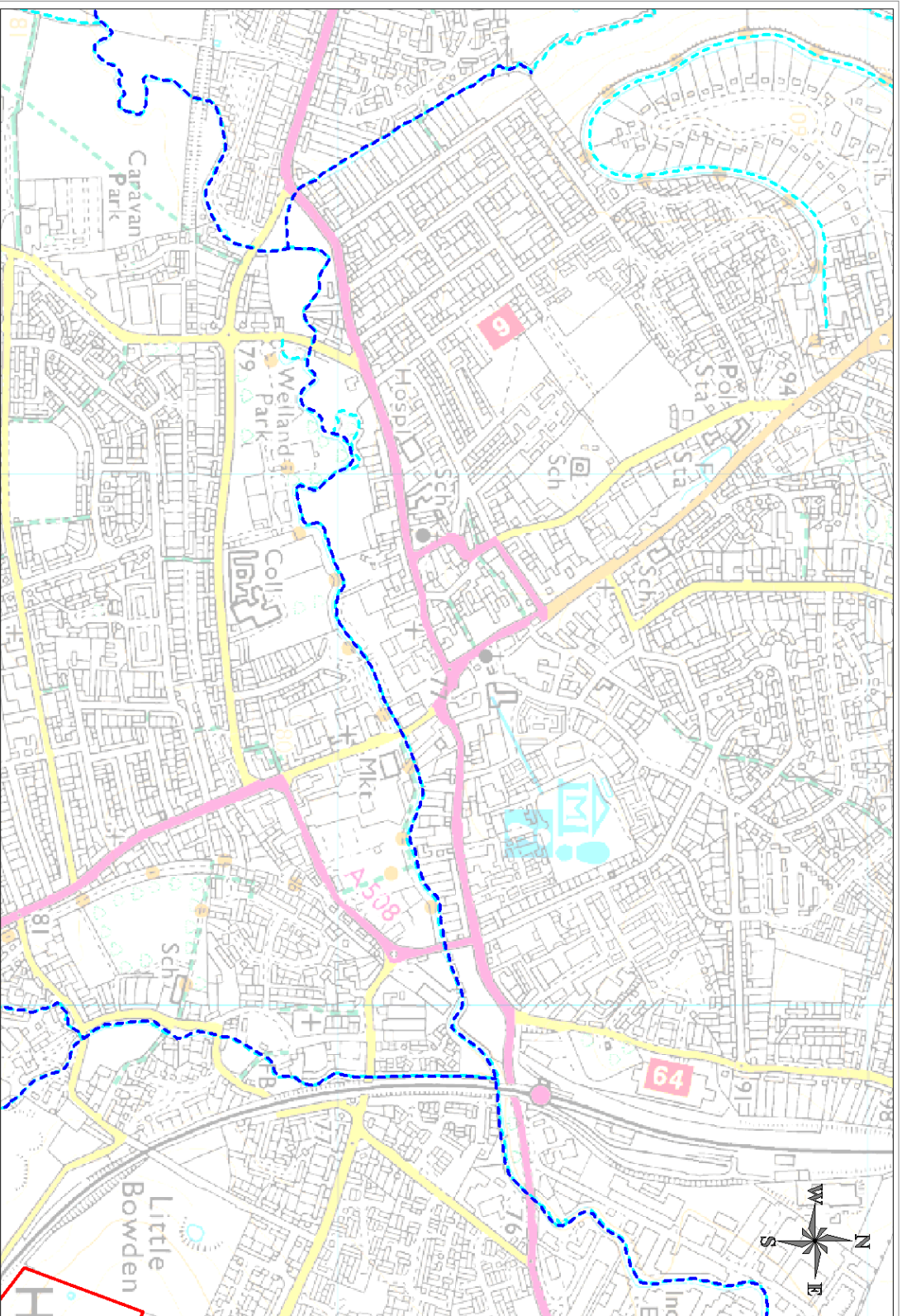
DRAWING NUMBER	SCALE
2013-Inv-015	Not To Scale
CREATED BY: Chris Bramley	DATE: 10-12-2013
APPROVED BY: Daniel Rawle	SIZE: A4

E-MAIL: flooding@leics.gov.uk
 PHONE: 0116 305 0001 FAX:
 COUNTY HALL • GLENFIELD • LEICESTER • LE3 8RJ

APPENDIX D

MAIN RIVER MAP





This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Leicestershire County Council. LA100019271. Published 2013.

This is not a definitive record, but is based on the best available information and is given without warranty. If roadside ditches are present, the normal presumption is that these do not generally form part of the publicly maintainable highway. This plan has been produced in relation to the specified area of enquiry and should not be used for any other purpose, since its accuracy can not be guaranteed.

This map gives an indication of the broad areas likely to be at risk of surface water flooding. It is not suitable for use at an individual property scale due to the method used.

Key:

- Detailed River Network
- Main River
- Ordinary Watercourse

NOTES:

1. N/A



ENVIRONMENT AND TRANSPORT
DEPARTMENT

ON BEHALF OF THE
DIRECTOR

LEICESTERSHIRE COUNTY COUNCIL
ENVIRONMENT AND TRANSPORT

SERVICE:
LEAD LOCAL FLOOD AUTHORITY

TITLE:
Rivers Map for
The Square

LOCATION:

THE SQUARE, MARKET HARBOUROUGH

DRAWING NUMBER

2013-Inv-015-R Not To Scale

CREATED BY: Chris Bramley DATE: 10-12-2013

APPROVED BY: Daniel Rawle SIZE: A4

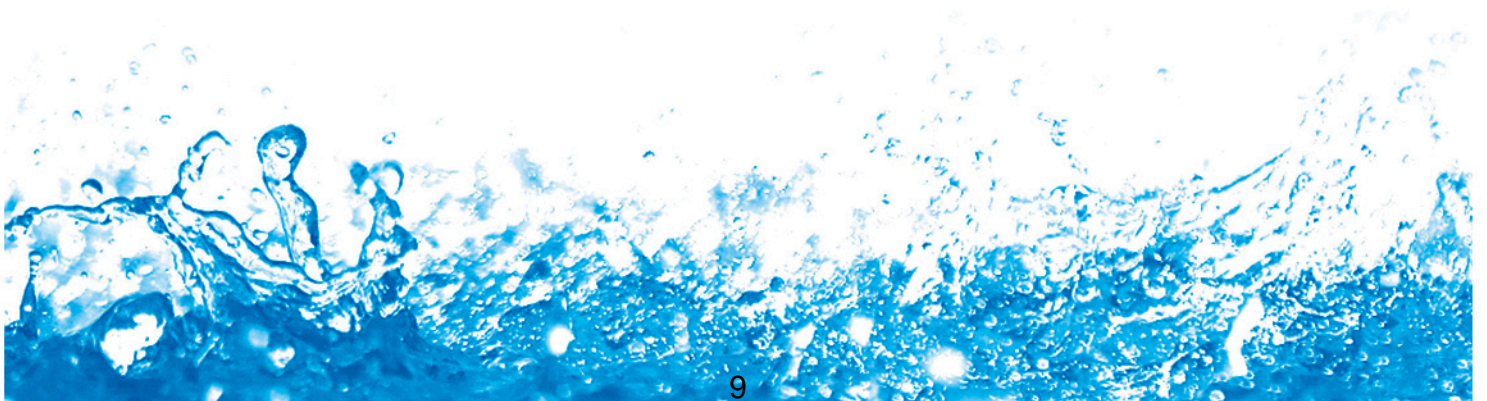
E-MAIL: flooding@leics.gov.uk

PHONE: 0116 305 0001 FAX:

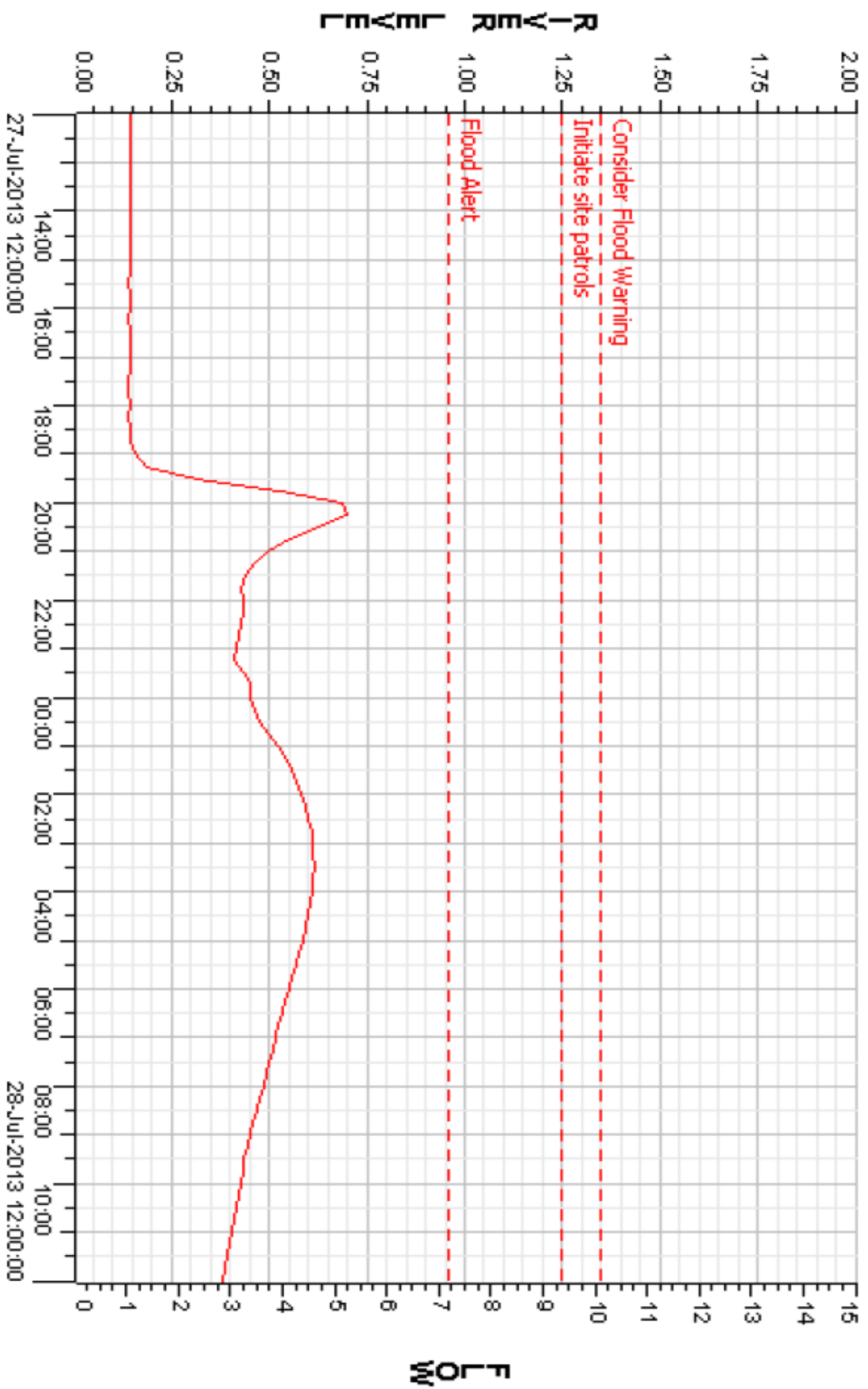
COUNTY HALL • GLENFIELD • LEICESTER • LE3 8RU

APPENDIX E

LEVELS FOR RIVER WELLDAND

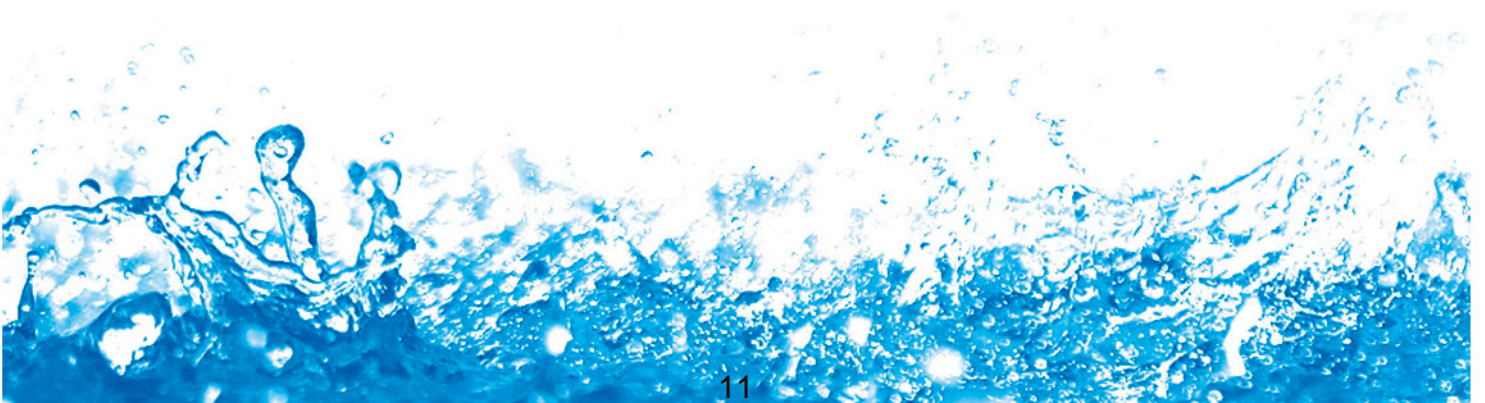


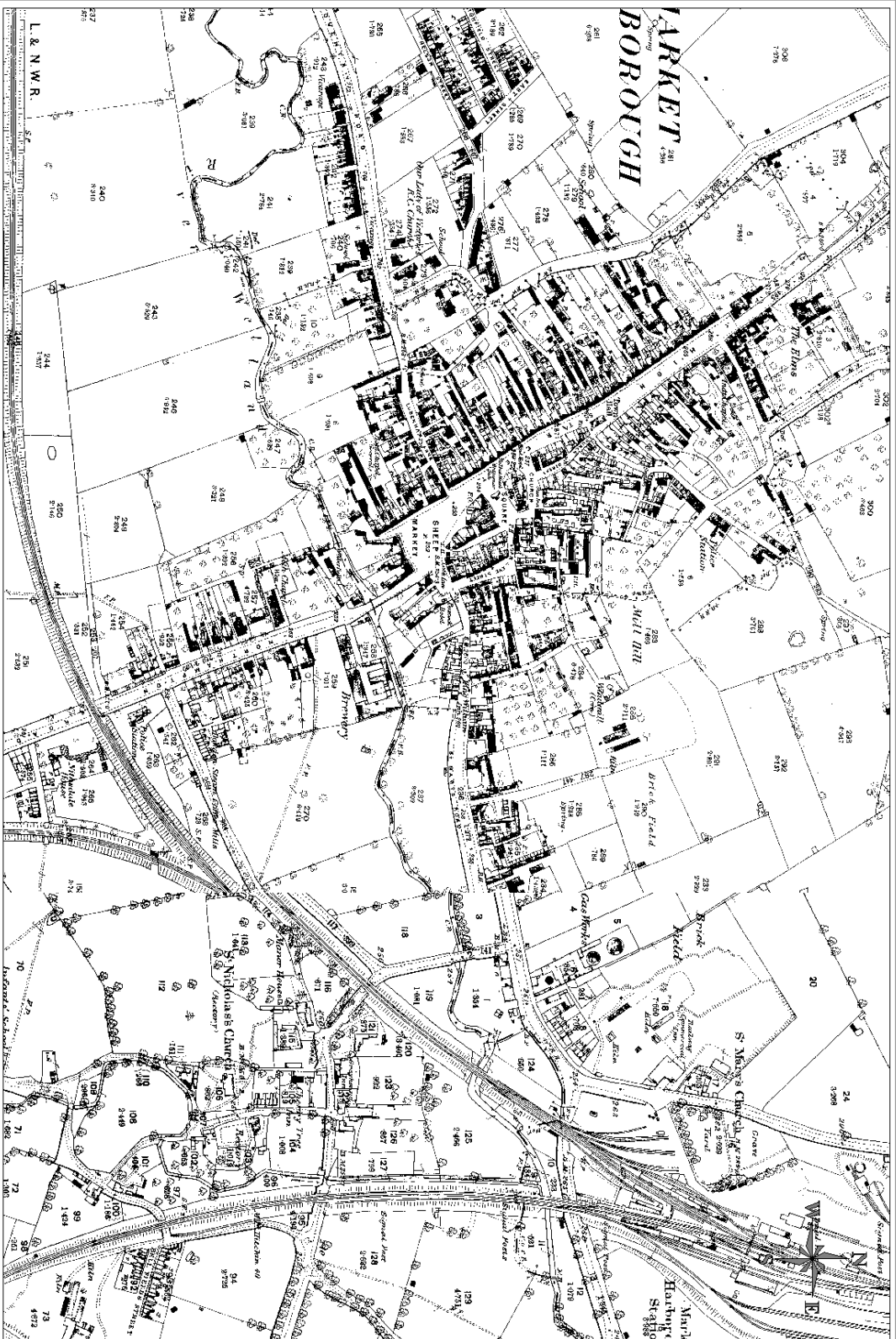
Market Harborough Commons Car Park G5



APPENDIX F

HISTORIC MAP





This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Leicestershire County Council. LA100019271. Published 2013.

This is not a definitive record, but is based on the best available information and is given without warranty. If roadside ditches are present, the normal presumption is that these do not generally form part of the publicly maintainable highway. This plan has been produced in relation to the specified area of enquiry and should not be used for any other purpose, since its accuracy can not be guaranteed.

This map gives an indication of the broad areas likely to be at risk of surface water flooding. It is not suitable for use at an individual property scale due to the method used.

Key:

NOTES:
1. N/A



**ENVIRONMENT AND TRANSPORT
DEPARTMENT**

**ON BEHALF OF THE
DIRECTOR**

**LEICESTERSHIRE COUNTY COUNCIL
ENVIRONMENT AND TRANSPORT**

**SERVICE:
LEAD LOCAL FLOOD AUTHORITY**

**TITLE:
1884 map for
The Square**

LOCATION:

THE SQUARE, MARKET HARBOUROUGH

DRAWING NUMBER **SCALE**

2013-Inv-015-1884 **Not To Scale**

CREATED BY: Chris Bramley **DATE:** 10-12-2013

APPROVED BY: Daniel Rawle **SIZE:** A4

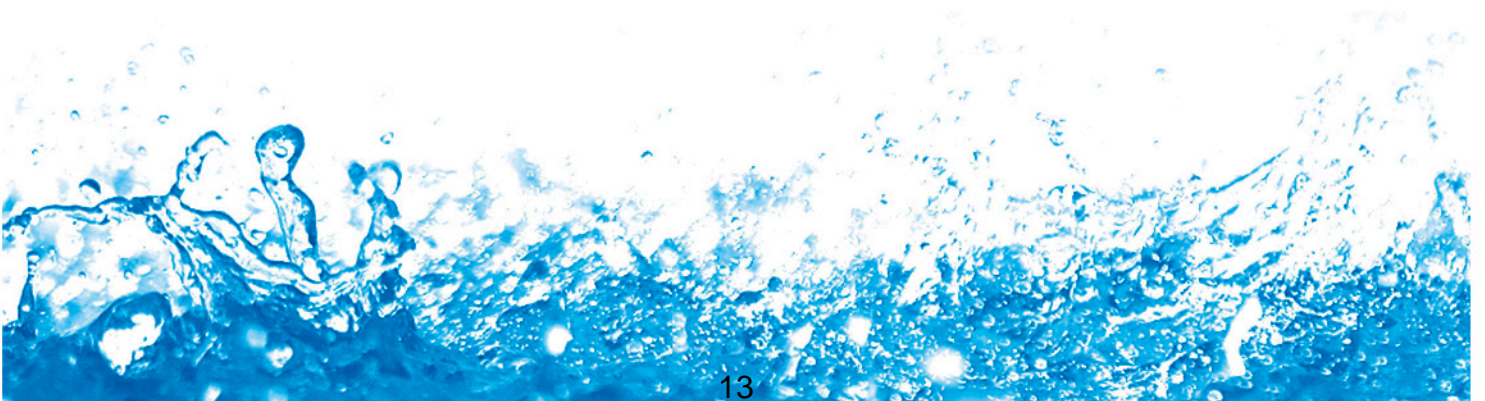
E-MAIL: flooding@leics.gov.uk

PHONE: 0116 305 0001 **FAX:**

COUNTY HALL · GLENFIELD · LEICESTER · LE3 8RJ

APPENDIX G

EA STANDARD NOTICE



Standard notice [not for use with Special Data, Personal Data or unlicensed 3rd party rights]



Information warning

We (The Environment Agency) do not promise that the Information supplied to You will always be accurate, free from viruses and other malicious or damaging code (if electronic), complete or up to date or that the Information will provide any particular facilities or functions or be suitable for any particular purpose. You must ensure that the Information meets your needs and are entirely responsible for the consequences of using the Information. Please also note any specific information warning or guidance supplied to you.

Permitted use

- The Information is protected by intellectual property rights and whilst you have certain statutory rights which include the right to read the Information, you are granted no additional use rights whatsoever unless you agree to the licence set out below.
- Commercial use of anything except EA OpenData is subject to payment of a £50 licence fee (+VAT) for each person seeking the benefit of the licence, except for use as an Environment Agency contractor or for approved media use.
- To activate this licence you do not need to contact us (unless you need to pay us a Commercial licence fee) but if you make any use in excess of your statutory rights you are deemed to accept the terms below.

Licence

We grant you a worldwide, royalty-free (apart from the £50 licence fee for commercial use), perpetual, non-exclusive licence to use the Information subject to the conditions below.

You are free to:

- ✓ copy, publish, distribute and transmit the Information
- ✓ adapt the Information
- ✓ exploit the Information commercially, for example, by combining it with other Information, or by including it in your own product or application

You must (where you do any of the above):

- ⚠ acknowledge the source of the Information by including the following attribution statement:
"Contains Environment Agency information © Environment Agency and database right"
- ⚠ ensure that you do not use the Information in a way that suggests any official status or that We endorse you or your use of the Information
- ⚠ ensure that you do not mislead others or misrepresent the Information or its source or use the Information in a way that is detrimental to the environment, including the risk of reduced future enhancement
- ⚠ ensure that your use of the Information does not breach the Data Protection Act 1998 or the Privacy and Electronic Communications (EC Directive) Regulations 2003

These are important conditions and if you fail to comply with them the rights granted to you under this licence, or any similar licence granted by us will end automatically.

No warranty

The Information is licensed 'as is' and We exclude all representations, warranties, obligations and liabilities in relation to the Information to the maximum extent permitted by law. We are not liable for any errors or omissions in the Information and shall not be liable for any loss, injury or damage of any kind caused by its use. We do not guarantee the continued supply of the Information.

Governing Law

This licence is governed by the laws of England and Wales.

Definitions

"Information" means the information that is protected by copyright or by database right (for example, literary and artistic works, content, data and source code) offered for use under the terms of this licence.

"Commercial" means:

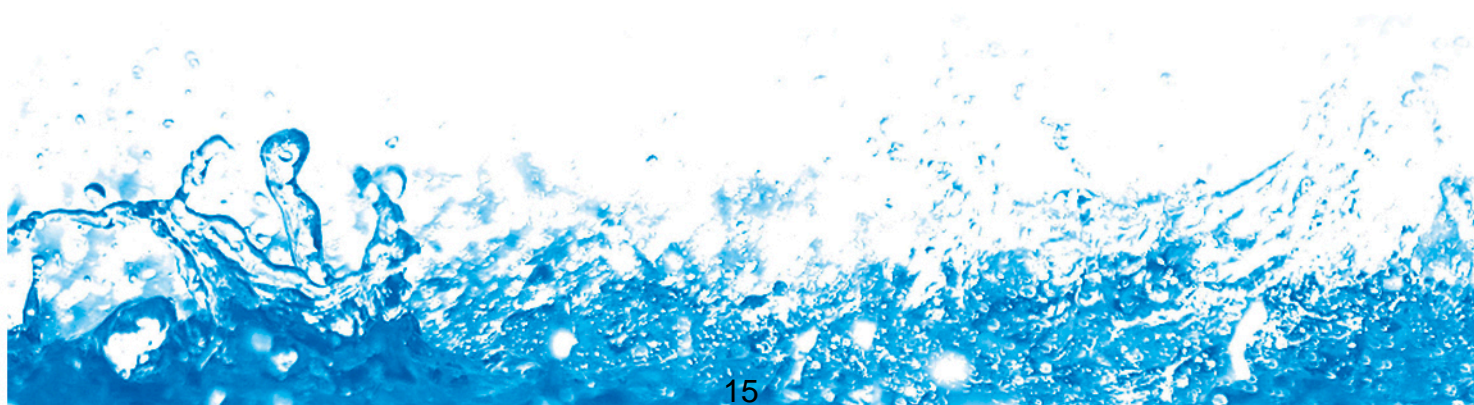
- offering a product or service containing the Information, or any adaptation of it, for a charge, or
- internal use for any purpose, or offering a product or service based on the Information for indirect commercial advantage, by an organisation that is primarily engaged in trade, commerce or a profession.

Contact: enquiries@environment-agency.gov.uk

03708 506506

APPENDIX H

QUESTIONNAIRE



Flooding Questionnaire

There are no right or wrong answers to the following questions. Please respond to all the questions in accordance to your own experience in this property. If you do not know or do not want to answer any of the questions leave them blank and move on to the next question.

Under NO circumstances will your personal details be given to any other organisation than those listed above

Name:.....

Address:.....

Postcode:.....

Telephone:..... E-mail:.....

1. When was the property built? Please provide the approximate year in the box below.

2. How many years have you lived/worked here? Please tick one box.

Less than 1 1-5 6-10 11-15 16 or over

3. What is the main use of this property? Please tick one box.

Residential	<input type="checkbox"/>
Restaurant / Pub / Food Outlet-Preparation-Storage	<input type="checkbox"/>
Nursery / School / College / University	<input type="checkbox"/>
Shop / Factory / Office Building	<input type="checkbox"/>
Health Centre / Hospital / Elderly Accommodation	<input type="checkbox"/>

Other. Please specify.

4. Have you experienced external or internal flooding to your property? Please tick one box.

Yes No If you answered "No", please move on to Question 8.

5. Please list the date & time of the flooding to your property and tick the relevant boxes.

DATE and TIME of Flooding?	INTERNAL Flooded Area (tick all that apply)							EXTERNAL Flooded Area (tick all that apply)							Where did the water come from? (tick all that apply)										
Please list actual date of flooding and the time when flooding started to affect your property. If you cannot recall exact dates/times please estimate e.g. first week in June, between 2 and 4pm.	Internal Room	Ground Floor	Internal Room	Upper Floor	Conservatory / Porch / Veranda	Attached Garage with adjoining door to property	Under Floor / through airbricks	Basement used as Living Accommodation	Cellar used for Storage or Utility Purposes	Max. Depth of water above threshold or floor (cm)	Detached Garage/ Other Out-building	Drive / Parking Area	Front Garden / Landscaped Area	Rear Garden / Landscaped Area	Road / Public Footpath	Other, Please specify.....	Max. Depth of water above ground (cm)	River, Stream or Beck	Sea-Water	Water running off the land	Water Overflowing from Drains and Gullies	Overflowing Foul Sewers, Cess Pits or Septic Tanks	Ground-Water	Other, Please specify.....	Don't Know
	E.g: 01/06/2012, 13:30	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		50	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		70	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		

6. How often does flooding typically occur? Please state if internally or externally.

7. What impact did the flooding have? Please tick as many as appropriate.

INTERNAL Flooding	
No visible damage	
Repairable, no permanent damage	
Irreparable damage to carpets, furniture, fittings	
Property became uninhabitable	
Damage to materials, stock, goods, crops	
Loss of production / business	
Temporary closure of shop / factory / business	

EXTERNAL Flooding	
Flooding has minimal effect	
Depth / area of flooding significantly affects normal use	
Significant damage to affected area	
Environmental Impact	
Unable to gain access/egress to property	
Disruption e.g. road flooded, power out, water or gas off	

8. What action have you taken to prevent flood water from entering your property? Please tick as many as appropriate.

Sand-bags Airbrick covers Temporary flood guards Permanent flood boards/guards

Other. Please specify.

Were you Warned?

9. Did you receive any warning about the flooding? This could be from Environment Agency, or friends/neighbours for example. Please tick one box.

Yes No If you answered "No", please move on to Question 10.

If "Yes", what was the date and time of the warning you received? Please write in the box below.

If "Yes", who gave you the flood warning? Please tick all that apply.

Environment Agency	
Police	
Fire Service	
Local Authority	
Flood Warden	
Neighbour/ Friend	
Media, e.g TV, Radio, Internet	

Other. Please specify.

10. Did you receive any assistance during the flooding? Please tick all that apply

Environment Agency	
Police	
Fire Service	
Local Authority	
Flood Warden	
Neighbour/ Friend	
Media, e.g TV, Radio, Internet	

Other. Please specify.

11. Please comment on the extent of the flooding in your area? For instance, were your neighbours flooded and how many other properties in your road flooded? Should you wish to draw a rough sketch, please use the Map provided.

Additional Comments

12. If you have any further comments regarding the 2013 floods, or any other information you think would be relevant to us, please comment below:

Thank you for completing this questionnaire.