

Witherley, Mythe Lane

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.:	2012-040
Investigation:	Witherley, Mythe Lane
Date of Flooding:	26/06/2012
Revision	FINAL

Officer:	R.JONES	David Smith Associates	5/11/14
Checked:	E.KNIGHT	Senior Technician	5/11/14
Approved:	J.MCGUINNESS	Senior Engineer	5/11/14



◆DAVID SMITH ASSOCIATES ← Consulting Structural & Civil Engineers ← 8 DUNCAN CLOSE ← MOULTON PARK ← NORTHAMPTON ← NN3 6WL TEL: (01604) 782620 ← FAX: (01604) 782629 email: post@dsagroup.co.uk Web: www.dsagroup.co.uk

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

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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. This Flood Investigation Report (FIR) has been completed by David Smith Associates on behalf of Leicestershire County Council.

It was deemed necessary to complete a formal investigation into the flood incident at Mythe Lane, Witherley, following the initial flooding on the 15 June 2012 and subsequent internal flooding of at least two properties on the 26th November 2012.

1.2 CAUSE OF FLOODING

The flooding that occurred at Mythe Lane, Witherley is a result of the intense rainfall that fell over a short period of time. The inability of existing drainage systems to outfall effectively meant surface water flowed over ground to low points on Mythe Lane.

1.3 MAIN FINDINGS

Existing drainage systems were unable to cope and outfall effectively to the Witherley Brook; this caused flooding of the highway and consequently restricted access to a number of properties. When the level of the Witherley Brook is below the highway drainage outfall the system does not cause flooding (normal conditions).

When the highway outfall is below water level in the Witherley Brook, surface water food risk significantly increases. The level in the Witherley Brook is primarily governed by downstream levels in the River Anker as opposed to run-off from the Witherley catchment.



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:

- Leicestershire County Council Lead local flood authority
- Leicestershire County Council Local highway authority
- Environment Agency Midlands Central Area
- Hinckley and Bosworth Borough Council
- Severn Trent Water



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

2.5 FLOODING INCIDENT

An intense rainfall event was experienced in the locality of Witherley on the 26th November 2012, which led to water levels rising in main rivers and ordinary watercourse levels, causing flooding to occur.

It was deemed necessary to complete a formal investigation into the flood incidents at Mythe Lane, Witherley on 26th November 2012. Access to at least three properties was affected and Mythe Lane was closed to traffic.



3 SITE BACKGROUND

3.1 LOCATION

Witherley is situated in the south-west of Leicestershire in the borough of Hinckley-Bosworth, immediately east of Atherstone, and approximately 7 miles northwest of Hinckley. Mythe Lane is the main route in and out of the northeast part of Witherley (Appendix A Location Plan). The village is affectively encircled by watercourses to the west and east of the village.



4 FLOODING INCIDENT

4.1 **PREVIOUS FLOODING INCIDENTS**

Leicestershire County Councils Highway Management System (HMS) has helped identify a number of incidents in which the carriageway and other areas have suffered from flooding. The following dates have been identified from the HMS system since 2010:

Year	Impact
15/06/12	Three residential properties, gardens and access affected- Mythe Lane closed to traffic.
26/06/12	Three residential properties, gardens and access affected Mythe Lane closed to traffic.
26/11/12	Three residential properties, gardens and access affected- Mythe Lane closed to traffic.

4.2 FLOOD INCIDENT

An area of flooding occurred on Mythe Lane immediately north of the junction with Hall Lane and Atterton Lane. The carriageway was also flooded with standing water approximately 400 metres north of the village where an ordinary watercourse flows beneath Mythe Lane.

During the period of heavy rainfall, flood water levels rose on Mythe Lane, this increase in levels presented a danger to pedestrians and vehicles. The flood water consisted of surface water flowing from higher ground, following contours along carriageways to the lowest areas of Mythe Lane.

The bow wave from vehicles driving through the flood water increased the risk of internal flooding to adjacent properties. Some areas of land along the ordinary watercourse north of Witherley, including the rear gardens on Mythe Lane and Atterton Lane, were flooded by the high water level in the Witherley Brook.

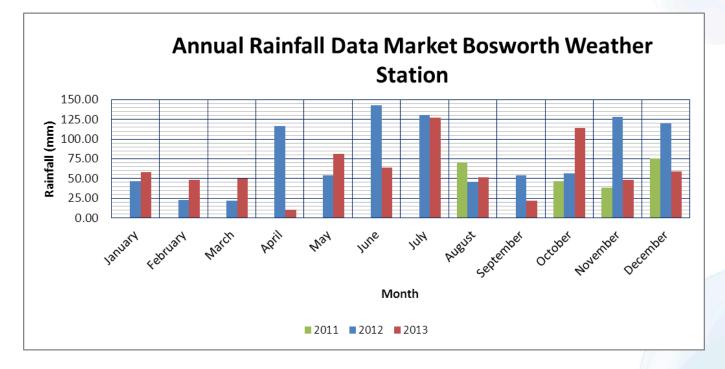
The main causes of flooding are considered to be:

- Intense rainfall on the catchment.
- High water levels in the Witherley Brook, The River Anker and the local ordinary watercourses.



4.3 RAINFALL ANALYSIS

An intense rainfall event was experienced in the locality of Witherley on 26th November 2012. Approximately 33mm of rainfall is recorded to have fallen on this date. This was preceded by a total of 44mm of rainfall over three days, these levels of rainfall are considered to be substantial.



Graph 1: Annual Rainfall, Market Bosworth



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 contacted affected persons to establish and quantify the physical effects of the flooding incident. It is understood from these conversations and County Council records that at least three properties flooded externally, and Mythe Lane was closed to traffic.

5.2 LOCAL DRAINAGE SYSTEM

The investigation is focused within the catchment area containing the ordinary watercourse north of Witherley known locally as 'Witherley Brook'. The catchment area extends to the north and east and drains predominantly agricultural land, and approximately half of the built up area of Witherley (North).

5.3 ORDINARY WATERCOURSE

The riparian owned ordinary watercourse originates at three main locations near to Ratcliffe Culey, Atterton and Fenny Drayton. The three tributaries join north of Witherley. The single watercourse then flows northwest along Mythe Lane for approximately 600 metres before flowing into Witherley Brook.

5.4 MAIN RIVER

The Witherley Brook runs adjacent to Mythe Lane in a northerly direction, the section of Mythe Lane closest to the village is protected from 'fluvial' flooding by bunding along the rivers banks.

5.5 HIGHWAY DRAINAGE SYSTEM

A dedicated highway drainage system is present in Witherley which is responsible for draining surface water from the highway. There are three separate surface water drainage systems which discharge to two headwall outlets with flap valves on the ordinary watercourses immediately north of Witherley. These highway drainage systems are shown in appendix B.

5.6 SEVERN TRENT WATER

A Severn Trent Water combined public sewerage system is recorded running north along the carriageway of Mythe Lane. This discharges to a pumping station immediately north of Witherley. The rising main from the pumping station is recorded to run in a northwest direction, towards Atherton Sewage Treatment Works and is not thought to be connected to flooding at this location. This system is responsible for conveying foul water form properties in Witherley as well as surface water which typically falls on property roofs.

5.7 EXTENT OF FLOODING

The extent of the flooding is broadly reflective of the low lying areas indicated the Flood Map for Surface Water (Appendix C). The Environment Agency's Flood Map for Surface Water shows areas where surface water would be expected to flow or pond.



RESPONSIBILITIES

5.8 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)

5.9 HINCKLEY AND BOSWORTH BOROUGH COUNCIL (HBBC)

HBBC 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, HBBC 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.

5.10 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.

5.11 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.



5.12 WATER COMPANY (SEVERN TRENT 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.

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

5.14 RESIDENTS, TENNANTS AND BUSINESSES

Witherley residents, tenants and businesses who are aware that they are at risk of flooding should take action to ensure that they protect themselves and their properties.

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.

5.15 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.

6. <u>CONCLUSIONS</u>

The flooding that occurred in Witherley is a result of the significant quantities of rainfall that fell causing main river and ordinary watercourse levels to rise. Existing drainage systems were surcharged and ejected water back to the surface. Drainage systems could not discharge surface water to a watercourse due to the raised water levels blocking the outlet flap valves.

The ineffectiveness of the existing drainage systems to collect and carry surface water occurred throughout the catchment so that surface water from the highest areas of the village could have flowed to the lowest points.

Surface water catchments across the village do not allow natural discharge routes to the natural watercourse, surface water is contained within the highway carriageways causing surface water to flow to a single point at the lowest part of the village.



7. RECOMMENDATIONS

7.1 LEAD LOCAL FLOOD AUTHORITY (LLFA)

The LLFA will continue to monitor the locality and revisit when required, and continue to coordinate the management of flood risk and the interaction of RMAs across Leicestershire.

LLFA to consider any additional support in respect of design and implementation of maintenance and improvement works, subject to resource implications.

7.3 HINCKLEY AND BOSWORTH BOROUGH COUNCIL

HBBC to continue to consult with the Environment Agency and LLFA as required in respect of planning applications for new developments to reduce flood risk.

7.4 HIGHWAY AUTHORITY (LCC)

Undertake regular highway drainage cleansing throughout the town and develop a detailed plan of their assets to share with the LLFA and the Community;

Assess the capacity of their assets over the whole catchment and identify any areas with insufficient capacity for draining runoff from the highway. Review the positions of gullies to ensure their effectiveness in removing water from the highway and review the levels of kerbs and road cambers to consider any works to prevent surface water reaching the lowest part of the village, or the runoff of surface water from the Highway to private properties.

Consider specific works to alter the arrangement of highway drainage outfalls at the area of flooding on Mythe Lane and assess whether the hydraulic head from drainage systems on higher ground can be utilised to maximise the volume water being able to discharge when water levels are over the outlet levels.

The nature of the flooding in Mythe Lane indicates that investment in the system will lessen the likelihood and impact of flooding rather than resolve it completely, therefore LCC should continue to close Mythe Lane as required when water levels present a danger.

7.5 SEVERN TRENT WATER

Assess the sources of water entering the public sewerage system and identify any areas of insufficient capacity. Where this leads to flood risk to properties improvement work should be considered.

7.6 LOCAL RESILIENCE FORUM

The LRF to support the community in the recruitment and training of a community based Flood Warden where necessary.



8 ACRONYMS

EA	Environment Agency
LCC	Leicestershire County Council
H&B	Hinckley and Bosworth
FIR	Flood Investigation Report
F&WA	Flood and Water Management Act 2010
LDA	Land Drainage Act 1991
LLFA	Lead Local Flood Authority
WRA	Water Resources Act 1991
LIDAR	Light Detection and Ranging
STW	Severn Trent Water Ltd
FMfSW	Flood Map for Surface Water
RMAs	Risk Management Authorities

9 USEFUL LINKS

9.5 ENVIRONMENT AGENCY

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

9.6 SEVERN TRENT WATER

Emergencies 0800 783 4444 (24hours)

9.7 LEICESTERSHIRE COUNTY COUNCIL

Highways 0116 305 0001 (24hours)

9.8 LEICESTERSHIRE COUNTY COUNCIL

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

9.9 HINCKLEY AND BOSWORTH BOROUGH COUNCIL

Customer Services 01455 238141 Email: Customer.Services@hinckley-bosworth.gov.uk

9.10 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/

Hinckley and Bosworth Borough Council Website: http://www.hinckley-bosworth.gov.uk/

Leicestershire County Council Flood Risk Team: http://www.feics.gov.uk/flooding

Local Resilience Forum: http://www.localresilienceforum.org.u 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

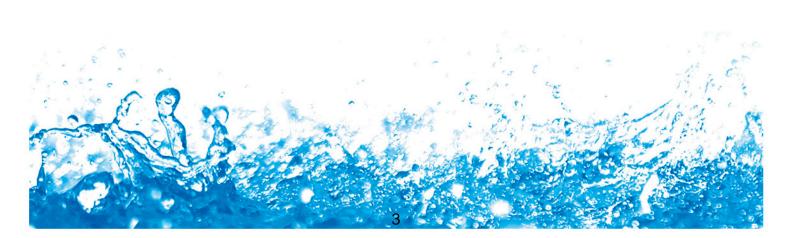
SITE LOCATION PLAN

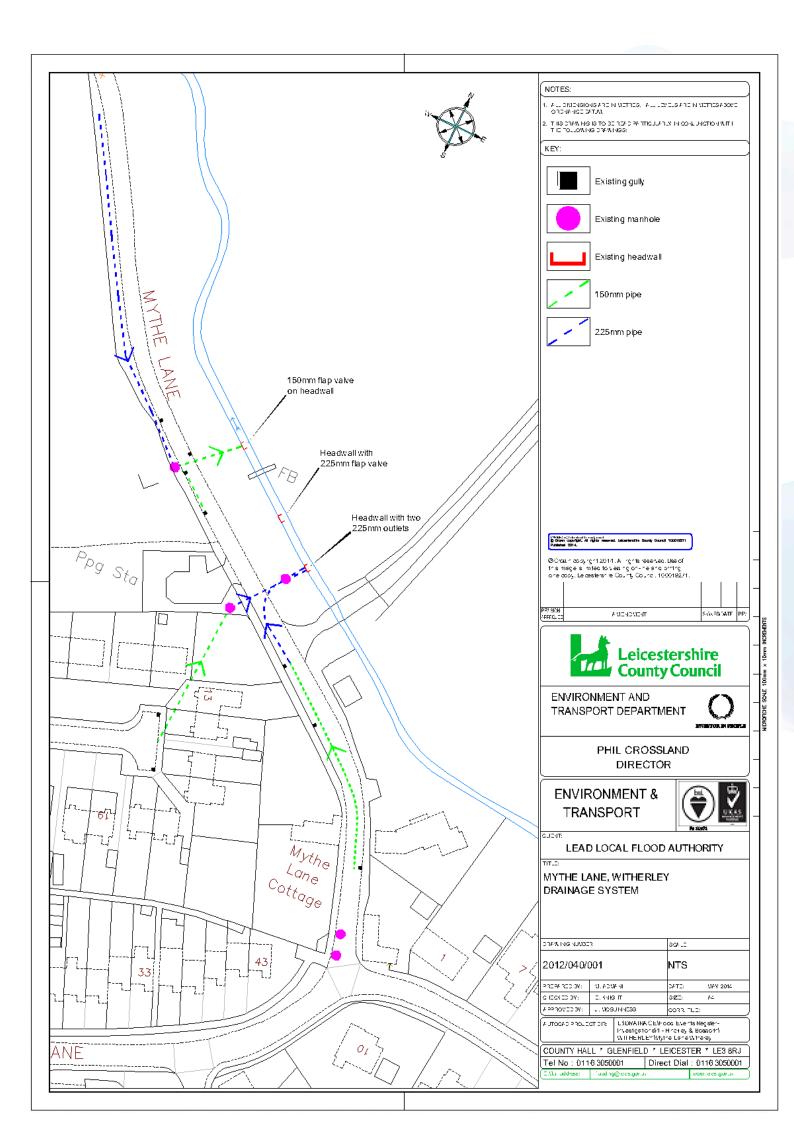


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APPENDIX B

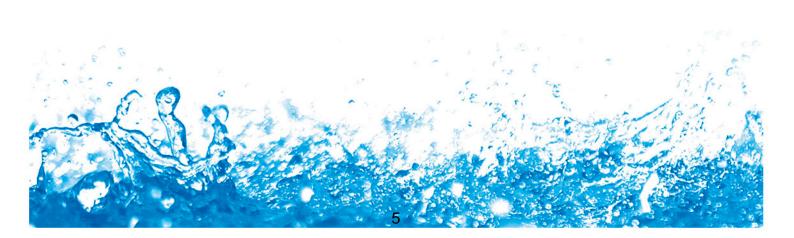
EXISTING DRAINAGE SYSTEM

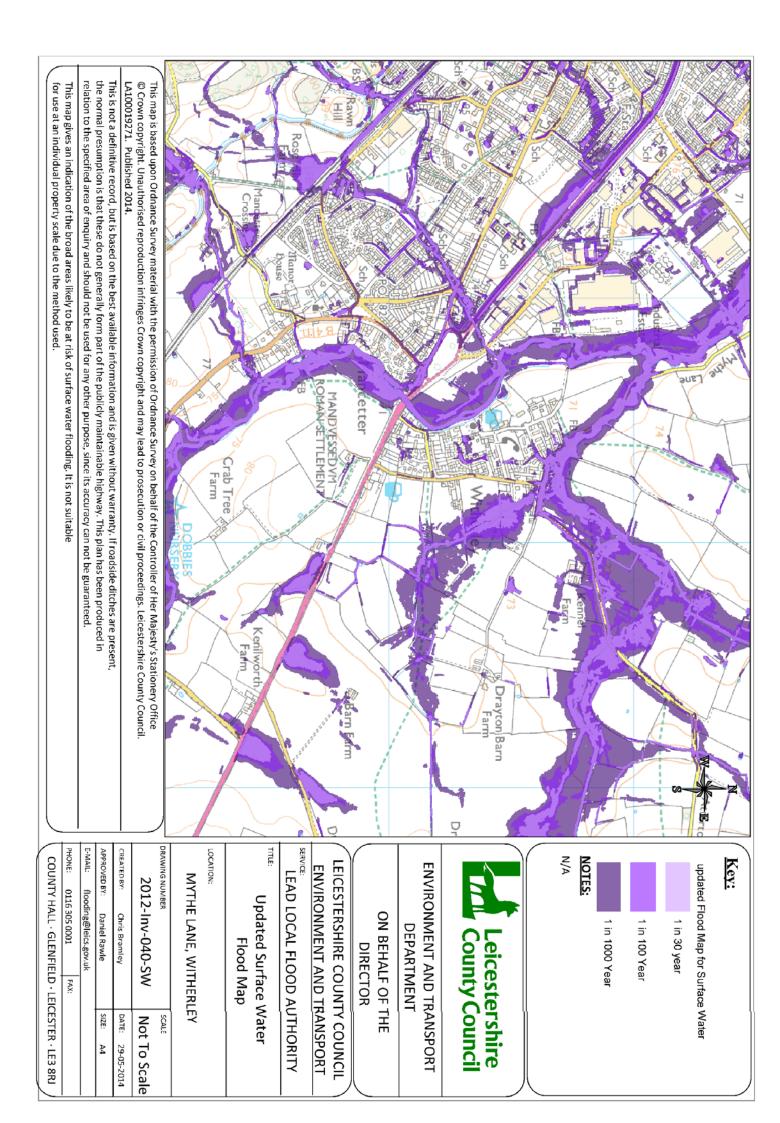




APPENDIX C

UPDATED FLOOD MAP FOR SURFACE WATER (FMfSW)





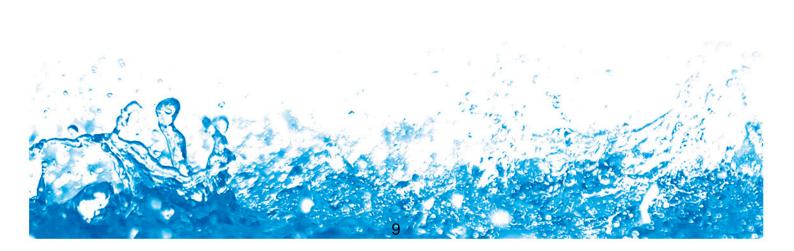
APPENDIX D

FLOOD ZONE MAP



Tor use at an individual property scale due to the method used.	isk of surface water flooding. It is not suitable		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		ce Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office red reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Leicestershire County Council.				Witherley		FB C C C C C C C C C C C C C C C C C C C			NUE 7 O	Montes the second secon
NTY HALL · GLENFIE		E-MAIL: flooding@leics.gov.uk	2012-Inv-040-FZ	DRAWING NUMBER	LOCATION: MYTHE LANE, WITHERLEY	Flood Zones Map, Mythe Lane	LEAD LOCAL FLOOD AUTHORITY	LEICESTERSHIRE COUNTY COUNCIL ENVIRONMENT AND TRANSPORT	ON BEHALF OF THE DIRECTOR	ENVIRONMENT AND TRANSPORT	Leicestershire County Council	<u>NOTES:</u> 1. N/A	Flood Zone 2	Flood Zones Flood Zone 3	Кеу
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APPENDIX E EA STANDARD NOTICE



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