

# **Coalville, Drome/Vercor Close**



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# **Flood Report**

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

# DETAILED FLOOD INVESTIGATION

<b>Investigation Ref.:</b>	<b>2012-011</b>
<b>Investigation:</b>	<b>Coalville, Drome/Vercor Close</b>
<b>Date of Flooding:</b>	<b>28 June 2012</b>
<b>Revision</b>	<b>Final</b>

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



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Appendix B – Flood Map for Surface Water (fmfsu)

Appendix C – Severn Trent Water plan

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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 Lead Local Flood Authority (LLFA) must undertake a 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 a formal investigation, it must publish the results.

It was deemed necessary to complete a formal investigation into the flooding incident at Drome and Vercor Close following the 28th June 2012 flooding incident. The internal flooding of a number of properties was reported to the LLFA and the source of the flooding was initially unclear.

### **1.2 CAUSE OF FLOODING**

The flooding that occurred at Drome and Vercor Close, Coalville, is a result of the intense rainfall that fell over a short period of time. The inability of water to enter a culvert (piped watercourse) due to an accumulation of debris on the inlet grill, combined with the intense rainfall exceeding the capacity of the highway drainage system and public sewer, resulted in flood water following natural contours to low points on Vercor and Drome Close.

### **1.3 MAIN FINDING**

The highway gullies and the 'public sewer' were not able to cope with the combination of both the quantity of rainfall water and the flood water created from the partial blockage of the grill protecting the inlet of the culvert. The natural flow path for the surface water was through the properties on Drome and Vercor Close. Water flowed around the houses on Vercor Close, and via the rear gardens onto Drome Close, where the water continued to flow into two 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 North West Leicestershire:

- Leicestershire County Council – Lead Local Flood Authority
- Leicestershire County Council – Local Highway Authority
- Environment Agency – Derbyshire, Nottinghamshire and Leicestershire
- Severn Trent Water Ltd



## 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

It was considered appropriate to complete a formal investigation into the flooding incident at Drome and Vercor Close, Coalville on 28th June 2012 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

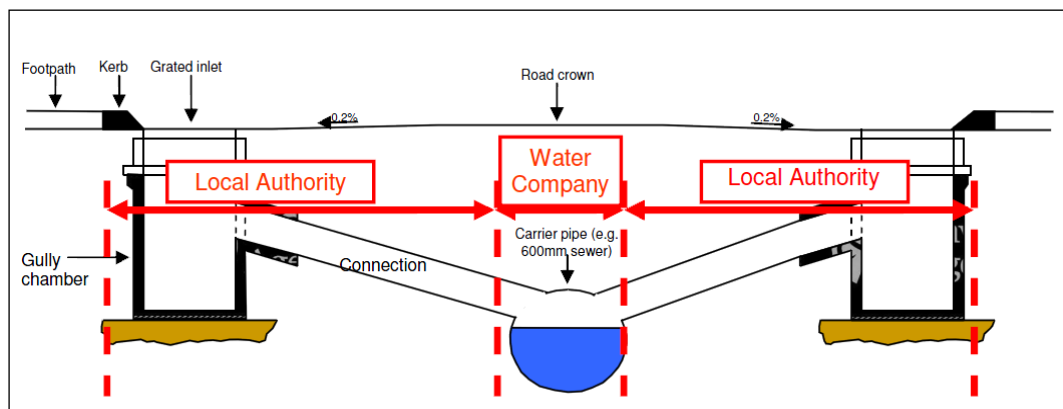
#### 3.1 LOCATION

Drome and Vercor Close are situated on the outskirts of Coalville. Coalville is located in the north west of Leicestershire approximately 11 miles from Leicester City Centre. South of Drome and Vercor Close is Bardon Hill, an operational quarry (appendix A location plan).

#### 3.2 DRAINAGE SYSTEMS

The flooding incident occurred on the edge of the Grace Dieu Brook catchment. The Grace Dieu Brook is classified as a 'Main River' and is the responsibility of the Environment Agency.

The area is also served by both surface water and combined systems, these systems are maintained by Seven Trent Water as the relevant water and sewage authority. The responsibility for lateral connections onto the main sewer varies and can either be the responsibility of the adjacent landowner or water company. The highway drainage network within the immediate area consists of a number of highway gullies which connect via lateral connections to the 'public sewer'. The highway authority is responsible for maintaining highway gullies 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 following table lists flooding incidents that have been recorded

Year	Impact
1987	Unknown
2002	Unknown
2012	Residential properties, gardens and highway affected
2013	Residential properties, gardens and highway affected

### 4.2 **FLOOD INCIDENT**

On the 28th June 2012 there was a very intense rainfall across the area that followed a number of days and weeks of significant heavy rain. A significant amount of rainwater was collected via the storm and combined sewer system of which reached its capacity limit very quickly.

The grill on the culvert inlet became partially blocked by an accumulation of debris which significantly reduced its capacity, the subsequent high amounts of water meant that water came out of channel flowed over ground following natural contours to the low points in the area.

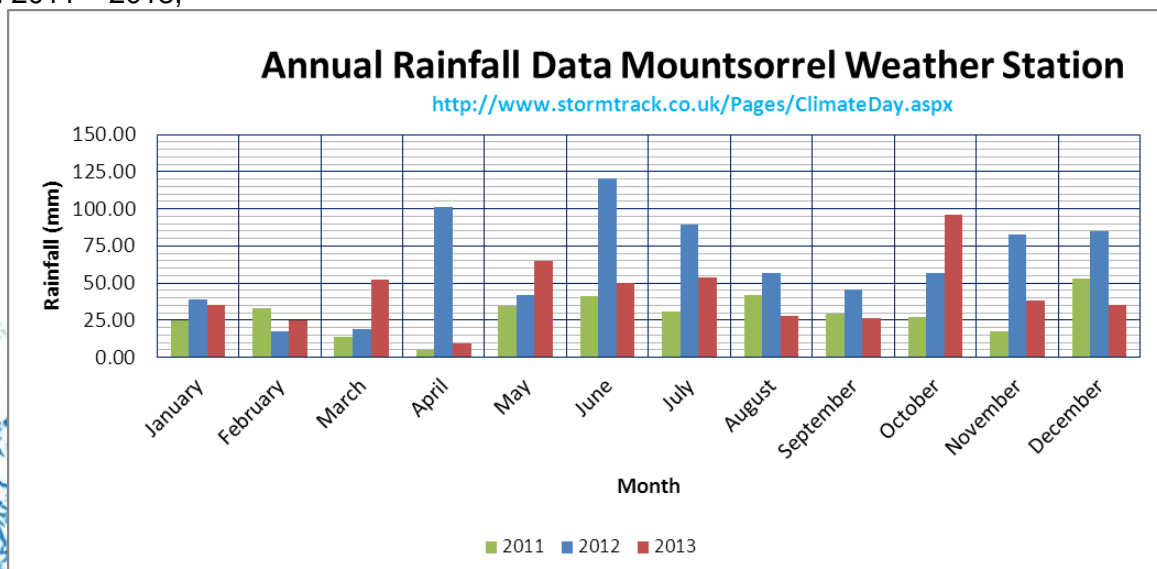
The existing highway drainage system present on Drome and Vercor close was not able to cope with the quantity of water.

### 4.3 **RAINFALL ANALYSIS**

*'On the 28th, torrential downpours of typically 25mm in 30 minutes resulted in widespread flash-flooding across parts of the Midlands and northern England. Intense convective rainfall made for substantial local variations in June rainfall totals but many areas reported more than twice of average'*

Source: <http://nora.nerc.ac.uk/18723/>

On 28th June 2012, approx. 22.00 mm rainfall was recorded, at a nearby weather station, this is a significant amount of water. The graph below depicts the annual rainfall at the Mountsorrel weather station 2011 – 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 spoke to the affected persons and other RMAs to establish and further quantify the physical effects of the flooding incident.

### **5.2 HIGHWAY DRAINS**

The spacing and location of the Gullies on Drome and Vercor Close are consistent with developments from this period, however drains within the area are believed to have struggled to cope with the increased water levels.

### **5.3 PUBLIC SEWER**

Within the area immediately outside the affected properties there is both a combined foul and surface water sewer;

- The combined sewer takes the foul water away to be treated and is not associated with the flooding in this location.
- The surface water sewer runs in a Westerly direction with the outfall into the Grace Dieu Brook.

### **5.4 WATERCOURSE**

Two unnamed ordinary watercourses are located to the south of Drome and Vercor Close these converge at an angled grill from which point the watercourse is culverted (900mm diameter), currently the culverted watercourse is the responsibility of STW, however utility companies would not normally maintain culverted watercourses.

### **5.5 EXTENT OF FLOODING**

The extent of the flooding in this location through the gardens is broadly reflective of the low lying areas indicated and the Flood Map for Surface Water (appendix B).

The Environment Agency's Flood Map for Surface Water shows areas where surface water would be expected to flow or pond.



## **RESPONSIBILITIES**

### **5.6 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)

### **5.7 NORTH WEST LEICESTERSHIRE DISTRICT COUNCIL**

NWLDC 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, NWLDC 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.

### **5.8 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.

### **5.9 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.

## 5.10 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 1<sup>st</sup> 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.

## 5.11 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.

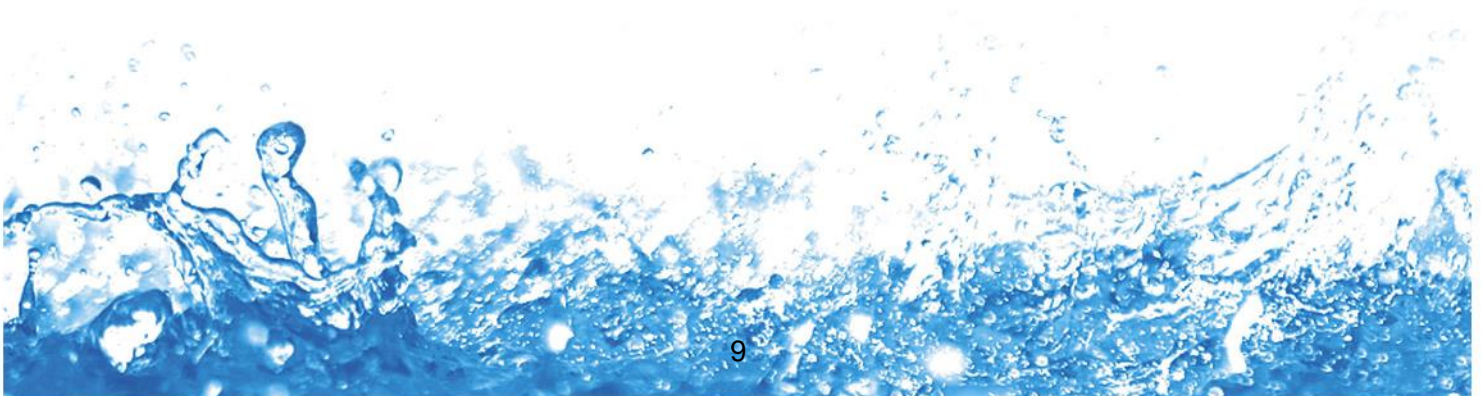
The following link provides further information:

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

## 5.12 RESIDENTS AND TENANTS

Local residents and tenants 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.





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## 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.





## 6 **CONCLUSION**

The flooding that occurred on Drome and Vercor Close is a result of the rainfall that fell in the preceding weeks combined with intense rainfall that fell over a short period of time. Existing drainage systems struggled to cope with the deluge of water, which effectively meant excess surface water flowed over ground following natural contours to low points in the area.

The grill on the culvert inlet became partially blocked by an accumulation of debris which significantly reduced its capacity, subsequent high water levels meant that the water broke its banks and flowed over ground following natural contours to the low points in the area.



## **7 RECOMENDATIONS**

### **7.1 SEVERN TRENT WATER**

Severn Trent Water should continue to monitor their network. A particular item of concern is transferred asset on Drome Close, following a STW investigation, infiltration into the system at a number of locations has been discovered, STW should continue to work closely with LLFA to resolve these issues.

### **7.2 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, to continue work with other RMAs to establish future maintenance responsibilities of the culverted watercourse.

### **7.3 LOCAL HIGHWAY AUTHORITY (LCC)**

The Highway Authority should check the gullies and lateral connections to ensure that they are in good working order. Consideration should be given to adding extra gullies on the system in the areas which are known to flood.

### **7.4 NORTH WEST LEICESTERSHIRE DISTRICT COUNCIL (NWLDC)**

NWLDC 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, NWLDC 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. To work with the LLFA to establish maintenance responsibilities of the culverts inlet grill.

### **7.5 THE ENVIRONMENT AGENCY (EA)**

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.



## 8 **ACRONYMS**

EA	Environment Agency
LCC	Leicestershire County Council
NWLDC	North West Leicestershire District Council
FIR	Flood Investigation Report
FWMA	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
RMA	Risk Management Authorities

## 9 **USEFUL CONTACTS**

### 9.1 **ENVIRONMENT AGENCY**

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

### 9.2 **SEVERN TRENT WATER**

Emergencies 0800 783 4444(24hours)  
Website: [www.stwater.co.uk](http://www.stwater.co.uk)

### 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](mailto:flooding@leics.gov.uk)

### 9.5 **NORTH WEST LEICESTERSHIRE DISTRICT COUNCIL**

Customer Services 01530 454545

### 9.6 **USEFUL LINKS**

**OFWAT Guidance on sewers**

[http://www.ofwat.gov.uk/consumerissues/rightsresponsibilities/sewers/prs\\_web\\_sewertransfer](http://www.ofwat.gov.uk/consumerissues/rightsresponsibilities/sewers/prs_web_sewertransfer)

**Environment Agency:**

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

**North West Leicestershire District Website:**

<https://www.nwleics.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>

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**Water Resources Act 1991:**

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

**Highways Act 1980:**

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

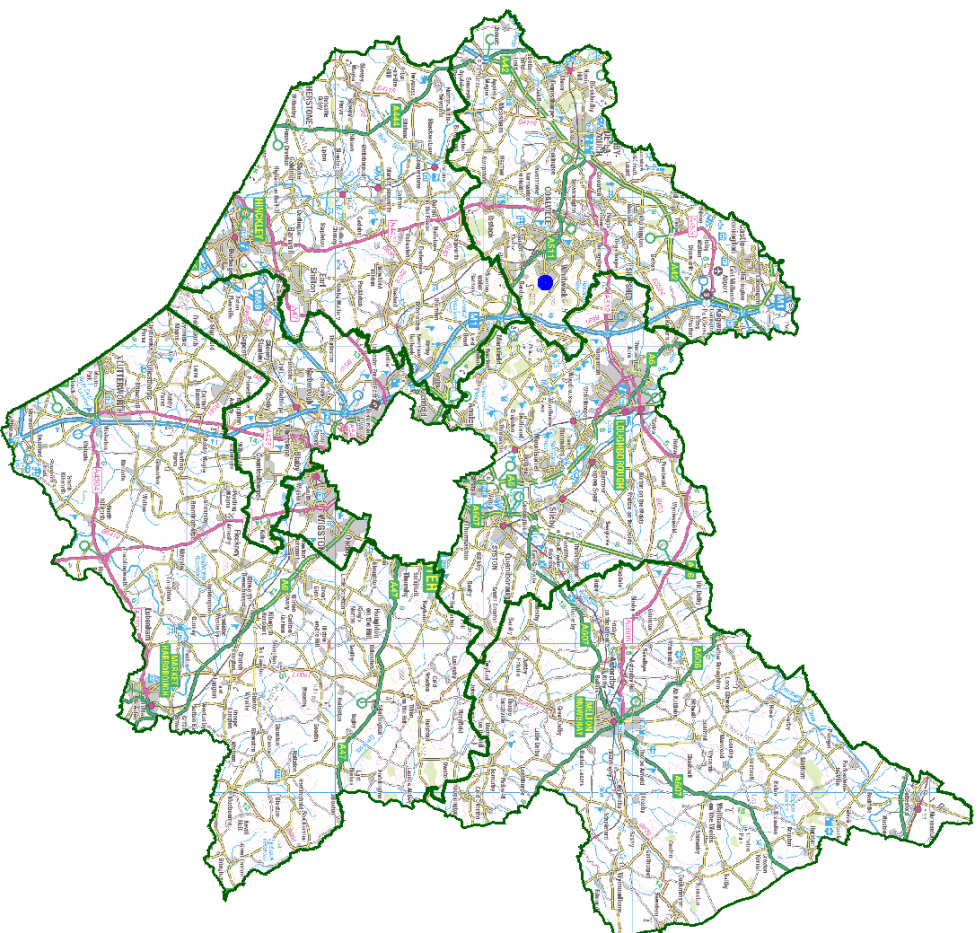
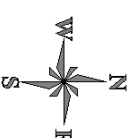




# **APPENDIX A**

## **SITE LOCATION PLAN**





**NOTES:**

1. The Blue Circle indicates the approximate location of the flooding



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DEPARTMENT

ON BEHALF OF THE  
DIRECTOR

LEICESTERSHIRE COUNTY COUNCIL  
ENVIRONMENT AND TRANSPORT

SERVICE:  
LEAD LOCAL FLOOD AUTHORITY

TITLE:  
Location Plan,  
Drome Close

LOCATION:  
DROME CLOSE, COALVILLE

DRAWING NUMBER  
2012-lnv-011-LP

SCALE  
Not To Scale

CREATED BY: Chris Bramley

DATE: 23-12-2013

APPROVED BY: Daniel Rawle

SIZE: A4

E-MAIL: [flooding@leics.gov.uk](mailto:flooding@leics.gov.uk)

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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.

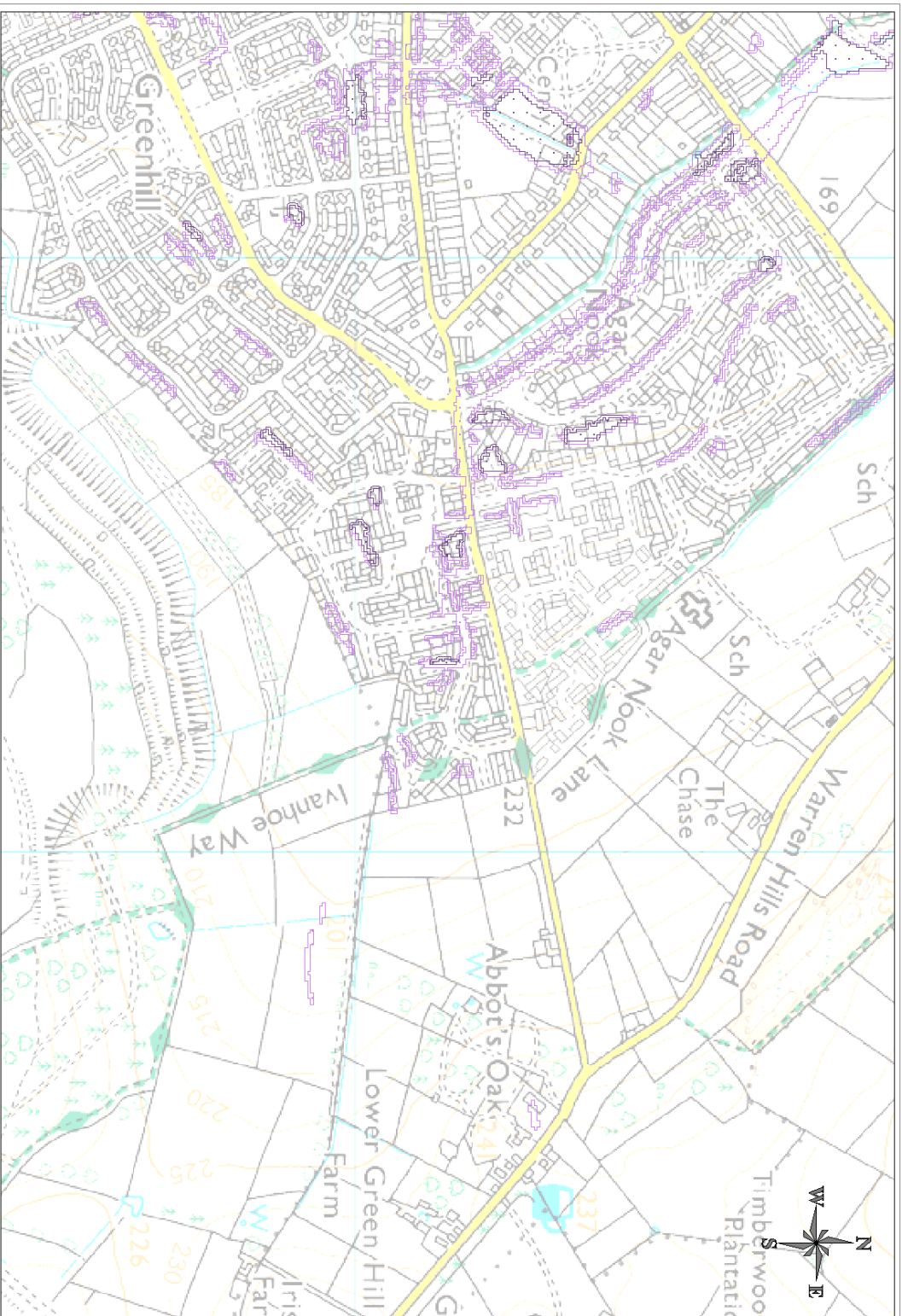
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## **APPENDIX B**

# **FLOOD MAP FOR SURFACE WATER (FMfSW)**









**Key**

1 in 30 Year Flood Map

-  Surface Water
-  Surface Water Deep

**NOTES:**

1. N/A



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DEPARTMENT  
  
ON BEHALF OF THE  
DIRECTOR

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

TITLE:  
  
1 in 30 Year Surface Water  
Flood Map, Drome Close

LOCATION:  
  
DROME CLOSE, COALVILLE

DRAWING NUMBER

2012-InV-011-SW30

SCALE

Not To Scale

CREATED BY: Chris Bramley

DATE: 24-12-2013

APPROVED BY: Daniel Rawle

SIZE: A4

E-MAIL: [flooding@leics.gov.uk](mailto:flooding@leics.gov.uk)

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# **APPENDIX C**

## **SEVERN TRENT WATER PLAN**









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# **APPENDIX D**

## **EA STANDARD NOTICE**



## Standard notice [not for use with Special Data, Personal Data or unlicensed 3<sup>rd</sup> party rights]



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