

## **S.19 FLOOD INVESTIGATION REPORT**

HARROW WINTER 2013/14

TRAFFIC HIGHWAYS and ASSET MANAGEMENT  
ENVIRONMENT AND ENTERPRISE

Date: March 2014

## Flood and Water Management Act 2010 Section 19 – Lead Local Flood Authorities: Investigations

This flood investigation report has been produced by Harrow Council as a Lead Local Flood Authority under Section 19 of the Flood and Water Management Act 2010:

- 1) On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers it necessary or appropriate, investigate -
  - a) which risk management authorities 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.

*Flood and Water Management Act (2010), S.19, c.29, London: HMSO*

### Revision Schedule

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# 1. Introduction

## 1.1. Background & Context

The London Borough of Harrow is located in the north-west of London and covers an area of 55km<sup>2</sup> lying within three river catchments: the Brent, Pinn and Crane. There is approximately 80kms of rivers and watercourse and 70 flood defence structures, 1 dry impounding reservoir and 2 statutory reservoirs defending the Borough from flooding.

The Flood and Water Management Act 2010 (the Act) gained royal ascent in April 2010 and established unitary and upper tier local authorities as Lead Local Flood Authorities (LLFAs). Section 19 of the Act gives LLFAs the duty to investigate a flood event when considered appropriate and to record details of the responsible Risk Management Authority (RMA) and if any actions have been taken. This was commenced in April 2011.

Prior to the commencement of Section 19, investigations into flooding reports were haphazard at best, being split between the Environment Agency (EA), Thames Water Utilities Limited (TWUL) or Harrow as the Land Drainage Authority (LDA) and Highways Authority (HA).

This included investigating flooding from all sources involving some partnership work at a local level with officers on the ground developing relationships with other RMA's. For the most part the EA and LDA would investigate fluvial flooding from main rivers and ordinary watercourses and TWUL would investigate foul flooding, and in most cases pass all surface water flooding to the LDA/HA.

## 1.2. Risk Management Authority Responsibilities

Table 1.1 shows the national guidance given as part of the Preliminary Flood Risk Assessment Spreadsheet submission to the Environment Agency, which outlines information to be collected by LLFAs. Table 1.2 explains the RMA's responsible for managing the flood risk from different sources that the LLFA investigation procedure follows.

**Table 1.1** Information LLFA must now record.

LLFA s are required to investigate significant flooding, record the following information and notify the relevant RMA; Harrow is in the process of transferring files to Floodstation .	
<b>Start Date</b>	<b>Duration</b>
<b>Probability</b>	
<b>Main Source</b>	Surface runoff; Groundwater; Ordinary watercourses; Artificial infrastructure; Main rivers; The sea;
<b>Main Mechanism</b>	Natural exceedance; Defence exceedance; Failure; Blockage or restriction;
<b>Main Characteristics</b>	Natural flood; Flash flood; Deep flood; Snow melt flood;
<b>Significant Consequences</b>	To residential, business or commercial property, critical infrastructure, road and rail, and the environment

**Table 1.2** Responsible RMA for flood source.

Flood Source	Lead Local Flood Authority	Environment Agency	Highway Authority	Thames Water Utilities Limited
main river		✓		
ordinary watercourse	✓			
highway drain	✓			
public sewers				✓
groundwater	✓			
reservoirs		✓		
pumping station				✓

## 2. Flood Incident(s)

### 2.1 Overview

During the 3 month period **December 2013 to February 2014** the Council Contact Centre received 122 calls in total for flooding problems. This number does not include flooding problems that were sent directly the Drainage Team from other Agencies, Utilities, Council's or other.

### 2.2 Extent

The majority of problems were widespread highway flooding across the whole borough resulting in traffic safety problems, inconvenience and delays to road users. This was exacerbated by land, highway ditches, watercourses and rivers flooding onto highways. Fig.1 & 2.

**Table 2.1** Flood Contacts.

RMA	Highway Drain	Land	Ordinary Watercourse	Main River	Pumping Station	Public Sewer
LLFA	122	1	2			
EA				4		
TWUL					1	6
Private		2				

### 2.3 RMA Response

Harrow LLFA provided a response to all of the contacts in table 2.1, in some cases it was a telephone call to re direct the caller to the relevant RMA, or an Engineer to visit the location to make an assessment and issue an instruction to our Term Contractor to undertake works to resolve the problem.

In some cases Harrow LLFA took on the burden of liaising with the caller(s) and other RMA's where responsibility was not quite clear or where other operating RMA contact centres misunderstood or did not have sufficient technical expertise to provide the correct response.

## 2.4 Costs

These are difficult to quantify; Harrow LLFA currently have a Term Contract rate with Kier to clean all highway road gulleys for an annual sum, however; in addition to this Harrow LLFA has spent an additional sum of £7,613.00 during Dec 13 – Feb 14 to deal with highway and watercourse flooding and CCTV investigations.

This does not include Officer time collating and managing responses for flooding including assisting residents with problems that should be dealt with by other RMA's.

## 3. Historic Flood Incident(s)

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### 3.1 Flood History Overview

Harrow is subject to riverine flooding from a number of watercourses, most notably the River Pinn, Wealdstone, Yeading, Kenton and Edgware Brooks. The borough is also subject to flooding from both foul and surface water sewers and suffers from the interaction between trunk mains and surface water networks. Fig.2.

### 3.2 Forward Planning History

Harrow LLFA has been managing flood risk for many years, using measures that include setting building thresholds, surface water attenuation and surface water discharge levels through planning controls, publishing bylaws and asset managing flood defences. Harrow is well defended from flooding.

Harrow LLFA was also the first Borough with 4 legal test cases, won, to place development control measures, such as storage and attenuation, duties for flood protection from ordinary watercourses, setting building thresholds and encouraging the use of SuDS.

### 3.3 Last Notable Flooding Event

To that end Harrow is now well defended from flood risk, the last most recent notable flood was on the Wealdstone Brook in 2007 where a combination of Main River and trunk sewer flooding caused 15 properties to suffer internal flooding. These properties have now been fitted with property level flood protection funded from FDiGA.

## 4. Evidence Collated for Investigation

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### 4.1 Harrow LLFA RMA

Harrow LLFA has collated our own evidence with the assistance of our Customer Contact Centre logging calls registered by email, telephone and web based contacts. Since the recent events our web pages have been updated to provide residents with more up to date online assistance and to reflect our current position on FRM measures <http://www.harrow.gov.uk/flooding>.

We are also keeping up to date with [live social media map](#) where we can pick up live data on flooding locations.

#### **4.2 Environment Agency RMA**

Harrow has had a strong relationship with our EA Local Office for many years, and at one point managed a number of main rivers under a Term Contract. Since the Pitt Review and Flood & Water Management Act these links have been strengthened and we now receive severe weather and flood warnings, notification of flood alerts and the opening and closing of the flood incident room.

These incidents are logged and enable Harrow LLFA to target our limited resources to those river corridors that are most critical and ensure that flood defences are operating effectively. We also encourage and include in planning conditions for residents and developers to sign up to Floodline.

#### **4.3 Thames Water Utilities Limited RMA**

Whilst Harrow LLFA and TWUL collaborate extremely well on local flood risk management projects and policies, since the closure of Area Offices and management of Network Engineers by the Waste Scheduling Planners, the relationship between RMA's has deteriorated.

Quite often Harrow LLFA will refer a contact from resident to TWUL Local Authority Contact Centre, a Contractor will quite often attend site unprepared. Currently there is still work to be done in terms of information exchange and responses.

This leaves the resident/customer going back and forth between Harrow LLFA and TWUL resulting in a time delay to resolve a problem that generally needs an urgent response.

## **5. Cause(s) of Flood Incident(s)**

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### **5.1 Main Reasons**

The causes of flooding during the last 3 months have been multiple, however; the unprecedented wet weather and global weather patterns affecting the jetstream were the main reason. However; increased urbanisation, loss of space for water ie. loss of soft front gardens and the increased volume of surface water draining directly to the surface water network contribute to these problems.

### **5.2 Underlying Reasons**

Mostly drainage network issues, some public foul and surface water Fig. 4, 5 & 6 problems with insufficient capacity and poorly maintained assets ie pumping station failure Fig.7. There were a number of highway drainage issues with poorly maintained roadside gulleys blocked, not cleaned, some of which is because of the difficulty in cleaning them in densely parked areas/streets.

There were also a number of problems of surface water running off land, some watercourses and highway ditches overtopping and one pumping station failure.

## **6. Recommendations**

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### **6.1 Harrow LLFA**

Harrow LLFA are currently reviewing the delivery of the gully cleaning service from our existing Term Contractor and are looking at improvement options.

Other highway drain flooding and/or problems where it is unclear which RMA is responsible have been listed and are awaiting further investigation which will include site visits, high pressure water jetting testing, CCTV and level surveys.

We will also review the current projects on our Capital Drainage Program for 2014/15 and may consider adding some projects and/or rescoring and prioritising existing projects. We will continue to work with other internal and external RMA's and stakeholders to combine as many green/blue objectives within our Projects.

### **6.2 Network Operations**

Greater collaboration is needed between the RMA's, neither the EA or TWUL liaise or notify Harrow LLFA when undertaking works in our area, for example TWUL submitted 671 permits to our Network Management Team to open up our highway it would it have been useful for TWUL to consult the LLFA to scope for collaborative opportunities.

What would also be useful is for all RMA's to provide a designated 'single point' contact for network problems and minor works, either for each Borough or using the Drain London Group Areas.

### **6.3 Local and Regional Partnership Planning**

Notification and forward planning, discussions and liaison for all projects related to the management of surface water would be useful, stronger and more clear lines of cooperation and communication with LLFA's, EA Ops delivery, TWUL Developer Services/Ops Delivery.

Ideally LFRMP meetings should be attended by either TWUL Network Engineers or Waste Planning Schedulers which would be of tremendous benefit to all parties providing exchange of information and knowledge opportunities.

We also discussed these operational problems we have faced with TWUL at Local FRM Partnership (13 March 2014) and Drain London (18 March 2014) meetings.









Fig 4, 5 & 6. flooding from public surface water sewer network



Fig 6.



Fig 7. flooding to highway and property due to pumping station failure