

# Flood Risk Management Annual Report

Report of the Assistant Director Highways and Infrastructure - March 2019

## 1. Introduction

A scrutiny review of Flood Risk Management and Response was published in June 2010. This set out 12 recommendations which were completed in 2010. In June 2010, The Flood and Water Management Act 2010 passed into law conveying new responsibilities and making Birmingham City Council a Lead Local Flood Authority (LLFA). This report highlights progress in addressing these statutory responsibilities and provides an update on other flood risk management related issues.

This report also provides an update into areas for improvement identified in the review of the May 2018 flooding conducted by members of the Sustainability & Transport O&S Committee on 19th July 2018.

## 2. Flood and Water Management Act Duties

The following work has been undertaken to fulfil the LLFA duties under the Flood and Water Management Act.

### 2.1 Local Flood Risk Management Strategy

The Local Flood Risk Management Strategy for Birmingham, October 2017 continues set out the objectives for managing local flood risk and the measures proposed to achieve those objectives.

### 2.2 Cooperation with other Flood Risk Management Authorities

The LLFA continues to cooperate extensively with other risk management authorities (RMAs) at various levels as established in the 3 tiered flood risk management governance structure.

#### 2.2.1 Strategic Flood Risk Management Board

The Strategic Board last met in December 2017 and due to the loss of a number of Flood Risk Management staff it was not possible to convene a meeting during 2018. The Strategic Board will meet again in April 2019. The Strategic Board acts as the focus and political driver for partnership activity.

#### 2.2.2 Birmingham Water Group

The Birmingham Water Group met in June 2018 and December 2018 and will meet again in June 2019. The Birmingham Water Group is the officer led partnership working to deliver flood risk management improvements across the City.

#### 2.2.3 Project Groups

The LLFA has worked with partners on a number of projects as follows:

## **River Rea Partnership**

The River Rea Partnership, led by the Environment Agency is currently delivering two flood risk management schemes in the City:

- **Selly Park North Flood Risk Management Scheme:**

Work continues on the Selly Park North Flood Risk Management Scheme. The Environment Agency has worked in partnership with Calthorpe Estates, Birmingham City Council and other organisations to develop the Selly Park Flood Risk Management Scheme to help reduce the risk of flooding.

The area of Selly Park North has a history of flooding from the Bourn Brook severely affecting the area in 2008 and more recently in June 2016. This scheme will help reduce flood risk to 150 properties in the area.

The scheme involves deepening and widening an existing flood water storage area near the Bourn Brook Walkway on Harborne Lane, Harborne. This will increase the capacity of the storage area and offer wildlife and ecology improvements. Flow improvement works are also being carried out at the Pebble Mill development site creating an overland flow route to direct flows into a new bypass culvert running underneath the Pershore Road. This will reduce the risk of fluvial flood water getting onto the highway and into properties. The Environment Agency, Severn Trent Water and Birmingham City council are continuing to look at the residual risk of surface water flooding.

Construction of the scheme is due to be completed March 2019 with landscaping due for completion in the late spring 2019.

- **Selly Park South Flood Risk Management Scheme**

Construction has been completed on the Environment Agency's £2.4 million flood risk management scheme in Selly Park South, with landscaping due to be completed April 2019. The Environment Agency has worked in partnership with St Andrew's Healthcare, Birmingham City Council and other organisations to develop the Selly Park Flood Risk Management Scheme to help reduce the risk of flooding.

The area of Selly Park South has a history of flooding from the River Rea, most notably in 2008 when some residents were forced to move out of their homes as a result of flood damage. This scheme will help protect more than 200 properties in the area from fluvial flooding. The Environment Agency, Severn Trent Water and Birmingham City council are looking at the residual risk of surface water flooding.

The scheme included the construction of an embankment on public open space, immediately upstream of Dogpool Lane bridge to help hold water during extreme heavy rainfall events. Bank levels were also raised downstream of the bridge to reduce the risk of flood water getting into properties.

The River Rea Partnership is currently undertaking the following strategic study:

- **Upper Bourn Brook Study**

The Environment Agency, Severn Trent Water and Birmingham City Council are working together on a catchment wide study to understand the flood risk and develop flood mitigation options for the upper Bourn Brook catchment. The study covers the catchment upstream of Harborne Lane, Selly Oak, taking in Quinton, Woodgate, Bartley Green and Harborne. The study is at an early stage, initial modelling has been undertaken and high level options are being investigated. Once this is complete the Environment Agency will prepare a Strategic Business Case on behalf of the partnership with a view to securing funding to further develop the options.

### River Tame Strategy

A key part of the River Tame Strategy is the implementation of the Perry Barr and Witton flood alleviation scheme which is to be delivered over 2 phases. Phase 1 has been completed which increases the level of protection to Perry Barr and Witton but not to the design standard. Phase 2 will increase flood storage in Sandwell Valley, the Environment Agency have begun temporary works to Phase 2 with permanent works due to start in the Summer 2019. The anticipated completion date is late 2020. Birmingham City Council has made a contribution of £600k to this scheme in early 2019.

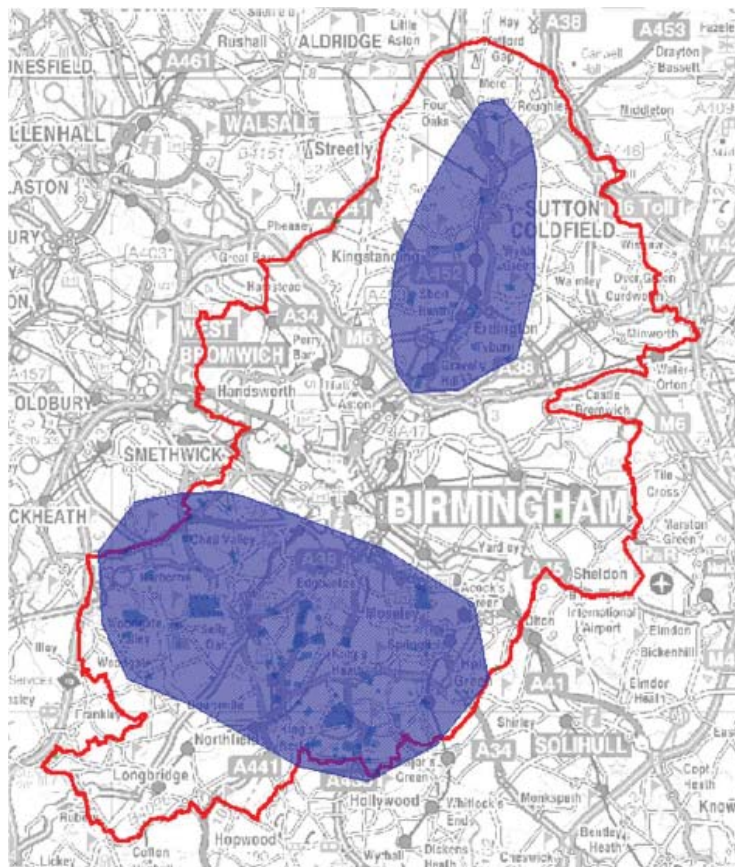
The Bromford reach of the River Tame is subject to ongoing discussion to seek to align budgets for flood risk management and housing development on the Bromford Estate. Discussions also continue with the EA and HS2 to ensure any opportunities in this area are not missed.

## 2.3 Investigation and Publication of Reports of Flooding Incidents

### 2.3.1 Significant Flood Events

A significant storm event occurred in Birmingham on 27<sup>th</sup> May 2018. This storm caused widespread flooding across Birmingham, most notably affecting Bournbrook, Selly Park, Brandwood, Kings Heath, Druids Heath, Harborne, Highters Heath, Sparkhill and Sutton Coldfield.

The main areas affected by the May 2018 storms are shown below.



### During the Flood Event

Birmingham City Council received a high number of calls during the event, which reported flooding of properties, gardens and highways.

During the flood events, the LLFA coordinated with multiple Risk Management Authorities (RMAs) to ensure that the impact of flooding was managed effectively and the risk to people and properties was mitigated as far as reasonably practicable

#### **Initial Investigations**

As a result of this storm, a significant number of flooding incidents were reported to Birmingham City Council. Immediately following the events, Birmingham City Council distributed approximately 2,000 'Flood Surveys' to all residents within, or in close proximity to, all areas where flooding was reported.

494 responses were received, providing accounts of duration and depth of flooding along with any other pertinent information. These responses reported flood incidents which included internal property flooding, flooding to gardens and flooding to highways and surrounding areas. In total, 39 areas and 170 incidents of internal flooding were reported.

#### **Detailed Investigation and Analysis**

The LLFA conducted detailed investigation and individual location analysis of each of the 39 areas where a property experienced internal flooding.

These investigations typically included a review of existing infrastructure and topography, identification of predominant flow paths, site visits and local knowledge gathering

Through a detailed analysis, the LLFA have identified the types of flooding that occurred at each location during the events of May 2018.

#### **Step 4: Recommended Actions**

Following the analysis of the 39 affected areas, the LLFA have worked in collaboration with other RMAs to identify opportunities and options to mitigate the potential that a similar rainfall event will result in similar outcomes.

### **2.3.2 Section 19 Flooding Investigation Report**

The Flood and Water Management Act places a duty on LLFAs to investigate incidents of flooding. This is set out in Section 19 of the act and the investigations are therefore typically termed '*Section 19 Reports*.' A draft report has been prepared and is currently subject to consultation with other RMAs. It is anticipated that the final report will be published in late spring 2019 following sign off by the Strategic Flood Risk Management Board as per the previous Section 19 report into the May 2016 flooding.

Birmingham City Council and other RMAs continue to progress the actions identified in the May 2016 Section 19 Report

### **2.3.3 Flooded Sites Action Tracker**

Flood events are tracked in a Flooded Sites Action Tracker. A copy of the most recent tracker is attached in Appendix A. As a result of the May 2018 flooding the number of locations on the tracker has increased substantially. However plans are in place for the majority of locations, but solutions range from works in the current year, through to proposals for longer term national and regional grant funding.

## **2.4 Register of Flood Risk Management Assets**

Birmingham City Council continues to maintain a register of structures or features which, in the opinion of the authority, are likely to have a significant effect on a flood risk in its area. This register can be viewed online.

A number of assets have been inspected over the last 12 months in line with the inspection frequency set out in the asset register. Where an issue with an asset has been identified the asset owner has been notified and asked to undertake the necessary maintenance works.

## 2.5 Consenting Works on Ordinary Watercourses

Birmingham City Council as LLFA is the Authority responsible for regulating activities on ordinary watercourses in Birmingham. As a result Birmingham City Council is legally responsible for dealing with applications for ordinary watercourse land drainage consents.

In 2018, 11 applications were received.

## 2.6 Works to Manage Flood Risk

The LLFA has delivered a number of capital and revenue schemes. These works are funded from a variety of funding mechanisms and a considerable number of flood risk management works have been delivered internally on behalf of other BCC service areas. Most notably the Flood Risk Management Team works routinely with our Leisure services team to provide consultancy services for drainage and environmental improvement works as well as arranging statutory inspections under the Reservoir Act 1975 in order that the Council's large raised reservoirs are managed in accordance with the Act.

The following works have been progressed since January 2018.

### 2.6.1 Grant Funded: Flood Defence Grant in Aid and/or Local Levey

Property level resilience measures: (e.g. fitting of flood doors to properties)

- **Slade Road, Erdington** - currently on site
- **Fisher Close, Frankley** - currently on site
- **Billesley Lane, Moseley** - currently on site

### 2.6.2 Works Funded by Flood Risk Management Revenue Budget

Routine clearance to all strategic grill structures (frequencies vary from weekly to 6-monthly depending on the criticality of the asset) and additional grill clearance following severe weather:

### 2.6.3 City Wide

Sandbag distribution to Flood Action Groups.

- **Selly Park South**
- **Selly park North**
- **Northfield**
- **Sparkhill**

Restoring flood channel/culvert capacity by excavation, cutting back vegetation and removing major blockages:

- **Kingswood Road, Longbridge**
- **Sir Johns Road, Selly Park**
- **River Cole, Nethercote Road to Formans Road**
- **Beaumont Road to Arosa Drive, Harborne**
- **Inspecting strategic culvert structures:**

- **Quinton Road, Harts Green**
- **Tyburn Road, Tyburn**
- **Yateley Road Relief culvert, Harborne**
- **Brook Road, Harborne**
- **Park Lane, Castle Vale**
- **Eachlehurst Road, Walmley Ash**
- **Harborne Road, Harborne**
- **Hassop Road, Perry Beeches**

#### **2.6.4 Inspection & maintenance work to flood defence assets:**

- **Reynolds Road, Hockley Brook**
- **Overdale Road, Quinton**
- **Pensby Close, Springfield**
- **Mellors Close, Harborne**
- **Eachlehurst Road, Walmley Ash**
- **Hassop Road, Perry Beeches**

#### **2.6.5 Works provided for other BCC Departments**

On behalf of Housing:

- **Beaumont Drive, Harborne** - inspection & maintenance of flood assets
- **Fisher Close, Frankley** - inspection & maintenance of flood assets
- **Wheeler's lane, Kings Heath** – overland flow management
- **Glenside, Bartley Green** – overland flow management
- **Olton Boulevard West, Acoc's Green** - Restoring flood channel/culvert capacity
- **Perry Common Brook, Perry Common** - Restoring flood channel capacity and maintenance SuDS features

On behalf of Education:

- **Skills School, Redditch** – investigation works resolve localised flooding
- **Broadmeadow School, Kings Norton** – Bunding and associated drainage work
- **Sundridge School, Kingstanding** – Overland flow management and attenuation work.

On behalf of Bereavement:

- **Brandwood End Cemetery, Brandwood** – investigation and report with recommendations, asset improvement and maintenance works to resolve localised flooding

On behalf of Leisure:

- **Bleakhill Recreational Ground, Erdington**- Restoring flood channel capacity and stabilising embankment
- **Westley Brook, Sheldon** – Restoring flood channel capacity
- **Ward End Pool, Washwood Heath** – Water quality improvement works



- **Handsworth Park, Handsworth Wood** – Water quality improvement works
- **Queens Park, Harborne** – Major storm water attenuation basin
- **Marsh Hill, Erdington** - Restoring flood channel capacity
- **Formans Road, Spaxhill** - Restoring off-line flood storage capacity
- **Calthorpe Park, Edgbaston** – Overland flow management
- **Perry Hall Playing Fields, Perry Barr** - Emergency repair work to existing drainage system.
- **Scribblers lane, Billesley**- Restoring flood channel capacity
- **Knightlow Road, Harborne**, - Restoring flood channel capacity, bank stabilisation works and bridge replacement works.
- **Sarehole Mill, Springfield** - Restoring flood channel capacity
- **Park Lane, Castle vale** - Restoring flood channel capacity
- **Ackers culvert, Tyseley** – Asset management and restoring flood channel capacity of culvert.

On behalf of Transportation:

- **Plants Brook, Upper Holland Road, Sutton Coldfield** - Restoring flood channel/culvert capacity

On behalf of Highways

- **A38 Sutton Coldfield By-Pass** – routine maintenance of gullies, drainage system and ditch clearances

On behalf of external organisations

- **River Cole Formans Road to Acker site** – Restoring flood channel/culvert capacity by excavation, cutting back vegetation and removing major blockages (Environment Agency)
- **Stephens Pool, Sutton Coldfield** – Restoring flood capacity and environmental improvement works ( Kingstanding Regeneration Trust)

#### 2.6.6 Major Reservoir Works provided for BCC Leisure Services

- **Ward End Pool, Washwood Heath** – Safety works to dam walls and environmental improvement works
- **Witton Reservoir, Erdington**- Maintenance work to penstock, outfall, emergency spillway and Dam
- **Lifford Reservoir, Kings Norton** - Maintenance work to spillway and Dam
- **Trittford Reservoir, Yardley Wood** – Safety maintenance work auxiliary spillway & weir structure
- **Swanshurst Reservoir, Wake Green** – Maintenance work to Dam, outlet and spillway structure
- **Salford Reservoir, Aston**- Maintenance work to Dam, headwalls and installing additional monitoring stations to check structural movement
- **Bracebridge Reservoir, Sutton Coldfield** – Safety works to Dam wall
- **Longmoor Reservoir, Sutton Coldfield** – Safety works to spillway and refurbishment works to existing penstock

- **Powells Reservoir, Sutton Coldfield** – Safety works to dam walls ,existing penstock and spillway
- **Wyndley Reservoir, Sutton Coldfield** - Safety works to weir spillway and maintenance work to penstock

### 3. Flood Risk Regulations Duties

The Flood Risk Regulations implement the EU Floods Directive in England. They provide a framework for managing flood risk over a 6 year cycle, comprising:

- preliminary flood risk assessment (PFRA)
- identification of areas of potential significant risk, referred to as flood risk areas (FRAs)
- mapping of flood hazards and risk and
- Flood Risk Management Plans (FRMPs), setting out measures and actions to reduce the risk

LLFAs worked with the Environment Agency to publish the first set of FRMPs, covering the 10 river basin districts in England, on 17 March 2016. These plans set out how RMAs are working together, and with communities, to manage flood and coastal risk over the next 6 years up to December 2021.

The second round of the cycle commenced in 2017, with an updated PFRA produced in June 2017. In 2019 the Environment Agency will prepare flood hazard maps and flood risk maps for each Flood Risk Area to meet the deadline of June 2019.

### 4. Statutory Consultee Role for Planning

The LLFA is a statutory consultee for surface water on major developments (10 dwellings or more; or equivalent non-residential or mixed development). Local planning decisions are expected to ensure that SuDS for the management of runoff are put in place unless demonstrated to be inappropriate and that the sustainable drainage system should be designed to ensure that the maintenance and operation requirements are economically proportionate.

The number of applications, discharge of conditions and pre-app enquiries in between 2016 and 2018 is as follows:

Year	Total No. of Applications	Major Planning Applications	Pre-App/General Enquiries	Discharge of Condition
2016	380	156	72	152
2017	405	185	94	126
2018	392	140	83	169

### 5. Funding

#### 5.1 Funding Streams

##### **Funding for Lead Local Flood Authority**

Funding for LLFAs to meet the duties under the Flood Water Management Act is provided to Birmingham City Council as part of its annual settlement.



### **Revenue Budget**

A small budget is provided to support flood management responsibilities, these include land drainage, maintenance of ordinary watercourses and emergency response. This budget has reduced over recent years in line with City Council budget cuts.

### **Flood Defence Grant in Aid - Partnership Funding**

In the past, flood risk management schemes were generally funded by central government through the Flood Defence Grant in Aid (FDGIA) process which allocated funding to projects nationally based on cost/benefit prioritisation. This led to only schemes that scored highly in terms of benefits outweighing costs being taken forward.

From 2012 a revised approach has been undertaken. Funding levels for each scheme, paid by central government as FDGIA, relate directly to the benefits the scheme delivers, including number of households protected, damages prevented, deprivation, environmental benefits and amenity improvement. If the FDGIA does not cover the cost of the scheme, in order to proceed the scheme cost can be reduced and/or local contributions would need to be found.

### **Local Levy**

The City Council pays levies to the Environment Agency as Local Levy, in 2017/18 the Local Levy contribution was £283,000. The Local Levy is raised by the Regional Flood and Coastal Committee (Birmingham sits within the Trent Committee area) and is used as a locally-raised source of income to fund projects within the Trent region. It can be used to fund projects that might not be eligible for national funding or as a regional contribution to scheme costs under the partnership funding approach.

## **5.2 Funding Pressures**

Historic reductions in budget due to savings requirements have made it increasingly difficult to fulfil the duties under the Flood and Water Management Act, carry out the statutory consultee role for planning and undertake maintenance of flood risk management assets and provide emergency response.

The Partnership Funding process has resulted in a range of funding sources being required to promote and deliver flood risk management schemes. For some schemes this includes an element of FDGIA together with an element of Local Levy but for many schemes this still leaves a shortfall which needs to be provided as third party contributions. This approach puts significant pressure on limited resources to foster agreements and collaborations to facilitate schemes. In order for these schemes to progress local contributions or contributions from beneficiaries of the schemes need to be sought.

Aligning funding sources and facilitating the promotion of projects as well as seeking new funding opportunities continues to be a major priority for the Strategic Flood Risk Management Board going forward.

## **6. Scrutiny: Areas for Improvement**

Subsequent to the flooding on 27th May 2018, Councillors Jon Hunt and Roger Harmer took a motion for debate to the Birmingham City Council meeting on 12th June 2018 calling for an inquiry into the floods of May 2018, to be carried out promptly. The motion called for the inquiry to include strong resident input and for the report to be debated as a main agenda item at a future Full City Council meeting. The review was conducted by members of the Sustainability & Transport O&S Committee on 19th July 2018. A number of areas for improvement were noted in the subsequent investigation report. Progress against each area for improvement is outlined below.

## 6.1 Emergency Response Procedures

Area for Improvement: *This flood was significant and although not classified as a Major Incident and no triggers to activate the Emergency Arrangements were met, the impact was significant for all those concerned. The lack of notification and alerting by strategic partners resulted in the City Council not being able to establish the level of coordinated support it would wish. As part of a wider review, the City Council is enhancing its response and emergency arrangements, lowering the triggers to alert the Resilience team and ensuring their involvement. It is also working with strategic partners to ensure that more robust notification of incidents occurs. These changes are needed to provide residents and businesses with a more coordinated support package both during and after such flood events which meet the changing needs of residents during the recovery cycle.*

Update: The Council's Emergency Plan has been reviewed and an interim update has been issued with the latest version due to be published early March 2019. All core council roles within the plan have been identified and training provided and activation of the duty officer (Council) remains key to activating any of our arrangements. The proactivity of the duty officer has been increased and we are actively promoting the notification of Birmingham City Council from partners (and following up any missed notifications) by partners.

## 6.2 Model Constitution or Model Template for Flood Action Groups

Area for Improvement: *During the evidence gathering there was an offer of support from Paul Cobbing on behalf of the National Flood Forum to liaise with the City Council and to provide advice, mentoring and support to local residents wishing to set up a FLAG. It is hoped that Birmingham City Council will respond positively to this offer and that a model constitution or model template for FLAGS can be produced which can be made available as a resource to support local people to set up and run FLAGS in their area. However, as with any potential provision of support from the NFF to supplement the Birmingham City Council functions (either through establishing FLAGS or supporting citizens in recovery following an incident), funding will need to be identified and a clear understanding of what will be delivered for that funding will have to be agreed with the NFF and potentially other partner organisations.*

Update: The BCC Resilience team have been supporting FLAGS as much as it can alongside their other duties, since the floods in May 2018. Birmingham City Council working in partnership with the Environment Agency intends to promote the existing FLAG template prepared by the NFF. Flood Risk Management and Resilience will be considering how the NFF can support Birmingham City Council in the future.

## 6.3 Traffic Management during flood events

Area for Improvement: *The issue of Traffic Management during flood events needs to be followed up with both West Midlands Police and National Express West Midlands and other bus operators to make sure that a mechanism is put in place to ensure that traffic is re-routed and diverted away from flooded areas during a major incident.*

Update: Whilst it remains an operational consideration of all transport providers as to their routing, when activated, there are links and mechanisms in place to engage transport providers by Birmingham City Council as part of all our arrangements, the duty officer is able to contact transport providers and will endeavour to in a prioritised way (e.g. after dealing with risk to life and similar resident issues).

## 6.4 River Cole Valley Partnership

Area for Improvement: *A River Cole Valley Partnership arrangement should be pursued by the Environment Agency along the lines of the arrangements already in existence for the*

***rivers Rea and Tame, to facilitate the provision of flood defence and flood alleviation measures along the River Cole Valley.***

Update: The Environment Agency and Birmingham City Council have been working together since the floods of 2007 to develop flood alleviation measures along the River Cole valley. Over this time a number of partnerships have been developed including a joint study with Severn Trent Water and Solihull Metropolitan Borough Council. A number of options have been examined all of which failed to meet the central government cost benefit ratio for flood defence schemes.

The Environment Agency and Birmingham City Council have worked in partnership to undertake a debris removal along the River Cole since the flood event in May 2018. This work will reduce the risk of channel blockages and improve the conveyance of flows through the river.

In addition to this, the Environment Agency has been undertaking a programme of removing Japanese knotweed along the River Cole since 2018 as part of a 5 year eradication programme. This work will reduce the risk of damage to essential flood risk infrastructure.

The Environment Agency and Birmingham City Council have had further discussions since the 2018 flooding about developing a flood risk management scheme to offer protection to properties along the River Cole corridor including reviewing the risk status of the river and potential emainment to identify funding opportunities.

The Environment Agency has suggested that a catchment wide approach to managing flood risk needs to be taken to develop a programme for the next central government funding cycle (2021 - 2026). It has been agreed to invite Solihull LLFA and Worcestershire LLFA to form a catchment Partnership with Birmingham City Council and the Environment Agency to undertake an optioneering exercise to identify potential options for reducing flood risk.

Solihull LLFA are currently completing their Section 19 Report into the May 2018 storm event and flooding, and Worcestershire has completed into investigation into the flooding experienced in Hollywood in the upper reaches of the River Cole catchment. This information will be used to assess the number of properties at risk of flooding within the catchment and to assess funding opportunities.