

Flood Risk Management in Worcestershire

Annual Report 2020

ABBREVIATIONS.....	4
1. INTRODUCTION	5
2. UNDERSTANDING AND PRIORITISING FLOOD RISK.....	5
2.1. Local Flood Risk Management Strategy	5
2.2. Preliminary Flood Risk Assessment	5
2.3. Worcestershire Surface Water Management Plan.....	6
2.4. Local Flood Risk Management Plans.....	6
2.5. Investigations	6
2.6. Water Infrastructure for a Sustainable Environment (WISE).....	6
3. REDUCING THE LIKELIHOOD AND IMPACT OF FLOODING	7
3.1. Flood alleviation schemes.....	7
3.2. Flood Recovery Property Flood Resilience Scheme.....	7
3.3. Flood Recovery Support Grants.....	7
3.4. Highway Surface Water & Drainage Improvement Schemes	8
3.5. Highway Drainage Maintenance	8
3.6. Spatial Planning & Sustainable Drainage Systems (SuDS).....	8
3.7. Ordinary Watercourse Management	8
3.8. Main River Management.....	9
3.9. Natural Flood Management	9
3.10. Sewerage System Management.....	10
3.11. Emergency Planning and Response	11
4. GOVERNANCE & PARTNERSHIPS	12
4.1. Regional Flood & Coastal Committee.....	12
4.2. River Severn Partnership	12
4.3. Other Groups, Partnerships and Fora.....	12
5. COMMUNITY ENGAGEMENT & RESILIENCE.....	13
5.1. Local Flood Groups	13
5.2. Innovative Community Flood Recovery Support	13
6. PLANS, POLICIES & STRATEGIES.....	13
6.1. Flood Risk Management Strategy.....	13
6.2. Other Related Plans, Policies and Strategies	13
7. FUTURE SCOPING.....	14

7.1. Future Actions.....14
APPENDIX 1. RISK MANAGEMENT AUTHORITY ROLES.....15
APPENDIX 2. ROLE OF THE LEAD LOCAL FLOOD AUTHORITY.....16
APPENDIX 3. MAIN FLOOD RISK MANAGEMENT GOVERNANCE GROUPS.....17
APPENDIX 4. OTHER FLOOD RISK MANAGEMENT RELATED GROUPS18
APPENDIX 5.(a&b) WCC SUMMARY OF MAJOR FLOOD EVENTS.....19
APPENDIX 6. EA STORYBOARD OF FEBRUARY 2020 FLOOD EVENT19

ABBREVIATIONS

Acronym	Definition
CFMP	Catchment Flood Management Plan
CIL	Community Infrastructure Levy
Defra	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EU	European Union
FDGiA	Flood Defence Grant in Aid
FMfSW	Flood Map for Surface Water
FRM	Flood Risk Management
FRMP	Flood Risk Management Plan
FRMSCG	Flood Risk Management Strategic Co-ordinating Group
FRR	Flood Risk Regulations
FWMA	Flood & Water Management Act
GIS	Geographical Information System
HRA	Habitats Regulation Assessment
IDB	Internal Drainage Board
LEP	Local Economic Partnership
LFRMS	Local Flood Risk Management Strategy
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
LRF	Local Resilience Forum
LSIDB	Lower Severn Internal Drainage Board
MAFP	Multi-agency Flood Plan
NFF	National Flood Forum
NFM	Natural Flood Management
NFU	National Farmers Union
OWC	Ordinary Watercourse
PFR	Property Flood Resilience
PFRA	Preliminary Flood Risk Assessment
RFCC	Regional Flood & Coastal Committee
RMA	Risk Management Authority
SAB	SUDS Approving Body
SEA	Strategic Environmental Assessment
SEP	Strategic Economic Plan
SFRA	Strategic Flood Risk Assessment
SLA	Service Level Agreement
STWL	Severn Trent Water Limited
SuDS	Sustainable Drainage Systems
SWMP	Surface Water Management Plan
SWDP	South Worcestershire Development Plan
WCC	Worcestershire County Council
WLDG	Worcestershire Land Drainage Group

1. INTRODUCTION

Worcestershire has seen two major flood events in the last 20 months: Autumn 2019 and Winter 2020.

Successive bands of heavy rain led to surface water flooding, ordinary watercourse flooding and then main river flooding in October and November 2019. This resulted in more than 70 flooded residential properties, impacts on 50 businesses and a significant amount of disruption to infrastructure.

Record breaking rainfall, combined with completely saturated ground conditions, led to the River Severn and the River Teme reaching almost record high levels in February and March 2020 and levels remained elevated for an unprecedented period. This impacted on circa 700 residential properties, over 200 businesses and many pieces of critical infrastructure were severely impacted, a number of them twice or even three times during the extended flood event period.

The combined response and recovery effort was significant and some aspects of the recovery are still ongoing, alongside a major focus on investigation and mitigation.

Flood Risk Management remains a high priority for WCC, the Government and other Risk Management Authorities and these flood events corroborate the reason for this. The government has announced funding for Flood Risk Management for the next six years.

The Risk Management Authorities (including Worcestershire) have worked with partners, local communities and landowners over the last 20 months. The River Severn Partnership has also now been formed.

Despite resources committed to major flood events, and operational restrictions from Covid-19, the RMAs have continued their work to develop and deliver flooding and drainage schemes, scrutinise planning applications, manage watercourses, increase community resilience and improve drainage, sewerage and flood defence infrastructure. This all helps to reduce the risk of flooding to homes, businesses and important infrastructure where we can.

2. UNDERSTANDING AND PRIORITISING FLOOD RISK

2.1. Local Flood Risk Management Strategy

Flood risk management in Worcestershire is guided by the statutory Local Flood Risk Management Strategy (LFRMS), a key element of which is the regularly updated action plan. This contains actions to ensure a better understanding of flood risk, prioritisation of resources and management of flood issues.

2.2. Preliminary Flood Risk Assessment

Each LLFA was required to produce a Preliminary Flood Risk Assessment (PFRA) in 2011 in response to the EU Flood Directive. Worcestershire's PFRA was reviewed in 2017 and a revised, national assessment methodology, resulted in central Redditch being identified as a 'Flood Risk Area' (previously called 'Areas of Significant Risk'); the first in Worcestershire. As a result, a multi-RMA group developed a Flood Risk Management Plan for the area and development is ongoing to meet the new requirements of the Regulations.

2.3. Worcestershire Surface Water Management Plan

Worcestershire Surface Water Management Plan (SWMP) continues to provide the key evidence base for the Local Flood Risk Management Strategy. It identifies over 1,700 known flood spots across Worcestershire (a location where flooding has occurred which has impacted on property, business or infrastructure). Detailed information is captured on each location to enable investigation and prioritisation. This information is regularly updated following further investigations, mitigation schemes completed, and any new flood spots identified after further flood events.

The SWMP data continues to help prioritise the procurement and deployment of resources and to inform plans for new infrastructure development.

Information about known previous flood spots is currently being expanded by the identification and investigation of locations which have not yet flooded, but where there may be a potential risk of flooding in the future.

2.4. Local Flood Risk Management Plans

RMA working groups continue to assess and plan mitigation measures to address flooding where there are high concentrations of past and potentially future flood spots.

A standard local 'Flood Risk Management Plan' (FRMP) process and reporting structure has been adopted and followed at a number of locations, for example Bromsgrove, Droitwich, Hollywood, Redditch and, more recently, Hagley.

2.5. Investigations

The Flood and Water Management Act (2010) places a duty on the LLFA to formally investigate flooding it deems to be significant and publish a report of the findings. A policy defining the LLFA's approach to this, together with criteria confirming what represents 'significant' is set out in the Local Flood Risk Management Strategy.

The circumstances surrounding the flood events in Hagley (Oct/Nov 2019) resulted in a commitment to proceed with a formal investigation, despite the relatively small number of properties that were impacted. The investigation report was delayed due to Covid 19 and the flood events, however this is due to be published in the next few months. An action plan is in place, alongside the investigation, to respond to highlighted issues as they arise.

The major flood events in the Autumn of 2019 and the late Winter of 2020 are also being formally investigated and this information will be captured in a joint investigation report. This will include details of works already undertaken by the Environment Agency in its report of Summer 2020 (attached as appendix 6). Within the major flood events and in a number of smaller scale, localised surface water flood events, some informal investigations have been conducted, many of which are ongoing. These investigations will build on our knowledge and understanding of flood risk in Worcestershire.

2.6. Water Infrastructure for a Sustainable Environment (WISE)

A partnership between Worcestershire County Council, the Environment Agency, Severn Trent Water and the Worcestershire Local Enterprise Partnership has carried out a ground-breaking piece of work to combine multiple layers of data and identify key locations where flood risk management and water supply mitigation might unlock economic growth potential. This work will be taken forward and tested over coming months before potentially being integrated into the existing FRM prioritisation process.

3. REDUCING THE LIKELIHOOD AND IMPACT OF FLOODING

3.1. Flood alleviation schemes

A number of flood alleviation schemes have been completed or further developed over the last 20 months reducing the risk of flooding to more properties, businesses, key roads and other pieces of critical infrastructure. Key locations include:

- Upton-upon-Severn
- Severn Stoke
- Bewdley
- Tenbury
- Toronto Close, Lower Wick
- Areley Kings, Stourport
- Bromsgrove
- Worcester
- Redditch
- Huddington
- Wythall
- Malvern

A number of the above schemes are being accelerated in response to the major flood events and the recent allocation of additional funding from the Government, and match funding by Local Enterprise Partnership and local authorities.

Further scheme proposals are currently being prepared for submission to the Regional Flood & Coastal Committee, for their next six-year programme, which has received increased Government funding and starts in April 2021.

The GIS-based 'Register of FRM Schemes', produced by the WCC Flood Risk Management Team, is kept up to date and includes easily accessible information on past, current and forthcoming schemes in Worcestershire led by all of the RMAs.

3.2. Flood Recovery Property Flood Resilience Scheme

Government grant support of up to £5,000 per property was made available for installation of property flood resilience measures following the major flood events.

In Autumn of 2019, it was only Wychavon District that was eligible under the Government's criteria and the District council is still in the process of rolling out the grant and supporting the installation of PFR at more than 30 residential and business properties.

Following the February/March 2020 flood event, more than 400 properties in Wyre Forest and Malvern Hills Districts and Worcester City became eligible and the Districts/City Councils are currently in the relatively early stages of rolling out the grants.

This grant funding and the PFR it will enable are extremely welcome.

3.3. Flood Recovery Support Grants

Following each of the major flood events, Government grant funding was made available to support owners of residential properties which were flooded (£500ea) and businesses which were severely impacted (£2,500ea) in eligible districts. This was augmented by some funding from the County Council for districts which were not eligible for the Government funding.

Following the Government's announcement, the District/City Councils promptly administered this funding to those who were eligible; over 500 individual grants were issued.

WCC has committed £250,000 to a community recovery and resilience grant scheme which will be rolled out shortly. The grants will be delivered via the local County Councillors representing the parts of Worcestershire that were most impacted by the major February / March 2020 flood event.

3.4. Highway Surface Water & Drainage Improvement Schemes

More than 100 highway surface water and drainage improvement schemes have been completed over the last 20 months.

In addition, delivery of the Worcestershire Local Enterprise Partnership-funded programme of larger scale capital highway flood adaptation schemes was completed, with Upton-upon Severn coming into full operation. These schemes have increased the resilience of key transport routes and performed well during the five months of flooding during the last autumn and winter flood events, helping to reduce congestion and ensure that Worcestershire stayed open for business.

3.5. Highway Drainage Maintenance

Essential ongoing maintenance of highway drainage infrastructure continues. Another 200 broken gully connections are also repaired annually by Ringway as part of the Highways contract, and more than 55,000 gullies jetted.

3.6. Spatial Planning & Sustainable Drainage Systems (SuDS)

There was the foreseeable lull during the Covid-19 lockdown, but over the last 20 months, the RMAs have assessed and commented on drainage plans of over 1,500 planning applications.

Other planning related work has included:

- Contribution to the development of the South Worcestershire Development Plan accompanying SFRA and Water and Flood Risk Management policies
- Continued contribution to the development of Game Changer sites, including Worcester Six and the Redditch Eastern Gateway
- Contribution to the Minerals Local Plan and its water and flood risk management policies
- Contribution to key infrastructure projects including Worcestershire Parkway Station and Southern Link Road phases 3 and 4

3.7. Ordinary Watercourse Management

The District Council Land Drainage partnerships and the Lower Severn Internal Drainage Board have continued to ensure that the extensive network of smaller watercourses and ditches are appropriately managed and maintained. This has been achieved through:

- Inspection of over 80km of the watercourse network
- Liaison with riparian owners about maintenance and management of watercourses on their land
- Implementation of land drainage consenting duties and powers, including more than 100 applications processed and a number addressed by pre-application discussions
- Implementation of land drainage enforcement powers including more than 150 successful informal enforcement actions

- Recording and monitoring of flood risk management assets on the statutory 'Register & Record of Structures & Features'
- Direct maintenance by the Lower Severn Internal Drainage Board including vegetation management and dredging at Pendock, vegetation management on another 34km of watercourse in the Eldersfield and Longdon area and maintenance access improvements

3.8. Main River Management

A huge focus for the Environment Agency (EA), along with its RMA and responder partners, over the last 20 months has been in response to, recovery from and investigation of, the major flood events in the Autumn and Winter of 2019/20 (see appendices 5 and 6). In addition, the EA has continued to deliver its responsibility for the management of flood risk on 'Main Rivers' including:

- Further development of flood alleviation schemes at Severn Stoke (planning application submitted), Toronto Close in Worcester, Tenbury (funding in place and accelerated scheme development underway), Beale's Corner in Bewdley (accelerated scheme development underway) and Powick
- A business case is being developed to reduce flood risk on the Barbourne Brook, Worcester, and in Bromsgrove
- Further preparation for property flood resilience schemes in Worcester, Himbleton, Evesham, Wickhamford and Droitwich
- Inspection, repair and maintenance of the EA's existing flood defences and structures following the major flood events to ensure they are fit for purpose when next called upon
- Proactive maintenance works on more than 20 watercourses in Worcestershire including vegetation, debris and silt removal.

In its strategic role, the EA has, during the last 20 months:

- Overseen and directly implemented the final stages of the English Severn and Wye Regional Flood and Coastal Committee six-year capital investment programme (2015 – 2021) within which over £12 million in flood defence benefits has reduced flood risk to over 500 homes
- Led preparation for the next RFCC six-year programme beyond 2021 with a further £14 million being bid for to better protect over 1,000 homes
- Strongly supported the establishment and development of the River Severn Partnership
- Played a key partnership role in the Water Infrastructure for a Sustainable Economy project in Worcestershire
- Funded and participated in the virtual community flood recovery drop-in sessions
- Processed more than 50 Environmental Permitting Regulation applications
- Responded to more than 50 planning application consultations.
- Provided flood risk technical support and guidance on a number of major infrastructure projects including the Upton upon Severn highway flood adaptation schemes and the Southern Link Road Phases 3 and 4
- Worked with partners to align economic growth and local development plans with flood and environmental risks.

3.9. Natural Flood Management

The Worcestershire Natural Flood Management Project, funded by Defra via the EA and hosted by Worcestershire County Council, is focused on reducing and slowing the flow in three catchment areas within Worcestershire (with some upper catchment in Gloucestershire and Shropshire) as follows:

- The Cotswold tributaries – River Isbourne, Merry Brook and Badsey Brook
- Dowles Brook
- Barbourne Brook

During the last 20 months, despite significant delays due to flooding, waterlogged ground and Covid-19 lockdown, the project officers have made excellent progress on engagement with key partners, landowners and communities, gaining relevant consents and permissions and designing and installing over 150 interventions on the ground, and there are many more to come. To compensate for the enforced delays, a 12-month extension to the project has been requested from Defra; we are awaiting their response.

In the meantime, a bid to the Regional Flood & Coastal Committee for a six-year NFM Project is currently being developed. This will build on the experience and lessons learned from the current project and encompass many more locations across Worcestershire.

3.10. Sewerage System Management

Severn Trent Water has continued to deliver its flood risk management duties through a range of activities and schemes over the last 20 months, in increasing collaboration with other RMAs by:

- Dealing with and responding to flooding incidents including:
 - responding to 138 internal and 1407 external sewer flooding incidents in the Worcestershire area during 2019
 - supporting response to and recovery from the flood events in Hagley in October and November 2019
 - responding to multiple sewer flooding incidents during the wider major flood events in 2019 and 2020
 - supporting the operation of EA flood defences during the major flood events through deployment and operation of mobile pumps and amendment of vulnerable infrastructure at Bewdley, Worcester and Upton upon Severn
 - contributing to recovery from, and investigation of, the major flood events
 - contributing to implementation of Flood Risk Management Plans in a number of locations around the county
- Educating customers including:
 - visiting schools in Worcestershire and delivering key messages on saving water and sewer misuse to over 1,500 children through interactive assemblies, workshops and eco talks
 - proactively seeking new schools to visit and continuing to build on partnerships with existing schools and colleges
 - touring with the 'Wonderful Water tour bus'
- Dealing with developer enquiries including:
 - responding to over 40 sewer pre-planning developer enquiries seeking new connections to the sewerage system
 - responding to local planning authorities on planning applications for Worcestershire
- Carrying out CCTV Surveys including:
 - a focus on Critical Trunk Sewer CCTV Surveys including 2.8km of sewers in Redditch
 - continued proactive sewer surveying, cleansing and repairing programme to reduce the risk of flooding from sewers
- Delivering and supporting schemes including:
 - working jointly with the EA on a PFR scheme at Beale's Corner, Bewdley

- supporting EA and LLFA led schemes and initiatives at Severn Stoke, Toronto Close, Perdiswell, Beale's Corner in Bewdley, A38 Morrison's, Bromsgrove, and Broadway
- Supporting strategic growth including:
 - consulting on the STW Drainage and Waste Water Management Plan.
 - responding to consultations from Local Planning Authorities on the development of local plans and environmental policies
 - supporting the Water Infrastructure for a Sustainable Economy project
 - contributing to the Worcester City Integrated Drainage Strategy
- Improving our customer map request service including:
 - moving to an automated asset data approach using a leading external company, DIGDAT
 - updating our website and our HD website to show the new information, including links to DIGDAT

3.11. Emergency Planning and Response

WCC and District Council Emergency Planning, Drainage and Highways officers have worked with other RMA partners, responders and the overarching West Mercia Local Resilience Forum in order to:

- Help co-ordinate the response to and recovery from the major flood events inc:
 - Provision of 24/7 Emergency Planning single point of contact for the north Worcestershire Districts to link with Local Resilience Forum partners through Command & Control arrangements
 - Contribution to the West Mercia Local Resilience Forum Command & Control structure:
 - Bewdley Operational Co-ordination Group (Bronze Cell)
 - Tactical Co-ordination Group
 - Strategic Co-ordination Group
 - Communications Cell
 - Operation of internal Gold, Silver and Bronze co-ordination structures
 - Co-ordination of support to the community and professional partners from the County Volunteers Emergency Committee (CVEC) including 4 x 4 support / Search and Rescue
 - Coordination, chairing and contribution to the Recovery Co-ordination Group – ongoing
 - Contribute to and help co-ordinate the flood event response de-brief process
- Contribute to the flood event formal investigation and production of an investigation report
- Continue to support resilience within the identified Rapid Response Catchments
- Continue development of a network of local rain gauges to assist in future investigations and flood warning
- Attend Parish Council emergency planning fora and work with local communities to develop local resilience plans
- Further develop individual organisation response plans
- Install more remote watercourse monitoring equipment
- Monitor and respond to watercourse gauge triggers
- Further review sandbag policies
- Produce generic resident update sheets for use during and after a flood event

4. GOVERNANCE & PARTNERSHIPS

4.1. Regional Flood & Coastal Committee

The English Severn & Wye Regional Flood & Coastal Committee (RFCC) comprises elected representatives from each of the Lead Local Flood Authorities within the catchment area, along with a number of EA representatives and co-opted specialists.

The RFCC plays an important role in coordinating flood risk management including assessing proposed flood related schemes and allocating both Local Levy and Central Government Flood Defence Grant in Aid capital funding via its six-year plan of flood alleviation schemes.

The main focus for the RFCC over the last 20 months has been delivery of schemes and achievement of targets within the final year of the current six-year programme. More recently, this priority has been joined by preparation for the next six-year programme which will include a number of schemes in Worcestershire.

4.2. River Severn Partnership

The River Severn Partnership, formed in September 2019, brings together the Environment Agency, Local Authorities, Local Enterprise Partnerships, Severn Trent Water, Water Resources West, Natural Resources Wales, Wildlife Trusts and others to establish a strategy for adapting to climate change and to improve resilience across an area which covers the Rivers Severn, Teme, the Warwickshire Avon and the Wye.

The River Severn Partnership has secured funding of around £40 million to progress flood defence schemes and drive forward innovation. Around £35 million will be used to accelerate delivery of schemes to manage flood risk, including Tenbury Wells, and an additional £5.4 million to undertake carbon offsetting, resulting in significant tree planting and improving habitats and green spaces for local people along the river network.

Alongside scheme delivery, a further £1.5 million was secured by the Partnership in recognition of the innovative action it is seeking to take to build resilience. The Partnership has been chosen as one of four nationally to trial and develop new ways of planning ahead and making wise investment choices based on the long-term uncertainties brought by climate change. The hope is that this will provide a strong basis for the Partnership to bid into the wider £200million Innovative Resilience Programme which will be available later this year.

4.3. Other Groups, Partnerships and Fora

Representatives from WCC, the District Councils and often the other RMAs have attended meetings and fora including:

- Worcestershire FRM Strategic Coordinating Group
- Worcestershire Land Drainage Group
- District Council Land Drainage Partnership Boards
- Regional EA / LLFA Networking Group
- Worcestershire NFM Project Steering Group
- The West Mercia LRF (Worcestershire) Severe Weather Group
- The Local Government Flood Forum
- The Worcestershire Local Nature Partnership
- The Worcestershire Green Infrastructure Partnership
- The Worcestershire Infrastructure Steering Group
- The Worcestershire Local Transport Board

5. COMMUNITY ENGAGEMENT & RESILIENCE

5.1. Local Flood Groups

The Risk Management Authorities have worked closely with an increasing number of community flood groups over the last 20 months at locations including: Hollywood, Powick, Tenbury, Severn Stoke, Sedgeberrow, Charlton and Wolverley.

Community resilience is a major priority within the new National FRM Strategy and it is key that support for, and engagement with, these groups is continued and that more groups are encouraged to take shape in other at-risk communities, not least those severely impacted in the major 2019-20 flood events.

These groups are generally very active within the community and they provide a key link with the RMAs.

This important work is made possible and most effective by the embedded partnership with the National Flood Forum (NFF), a Bewdley-based charity with considerable experience and expertise in working with flooded individuals and communities.

The NFF's experience, empathy and critical independence is a key component in the successful engagement record we have and helps augment the development of trust.

5.2. Innovative Community Flood Recovery Support

During the summer of 2020 the NFF led a ground-breaking exercise to support flooded individuals via a series of virtual drop-in sessions. These were necessary due to Covid 19 lockdown restrictions.

The exercise was funded by the EA and each session was attended and supported by the full range of RMAs. Feedback from those who joined the sessions was extremely positive.

6. PLANS, POLICIES & STRATEGIES

6.1. Flood Risk Management Strategy

The Strategy Action Plan articulates a number of targets for the RMAs. The Strategy will be reviewed and updated during 2021. Progress with implementation has been monitored by the Worcestershire Flood Risk Management Strategic Co-ordinating Group.

6.2. Other Related Plans, Policies and Strategies

A range of other related plans, policies and strategies has been produced and/or contributed to by the RMAs over the last 12 months including:

- Preliminary Flood Risk Assessment
- Worcestershire Surface Water Management Plan
- Local Flood Risk Management Plans
- Multi-Agency Flood Plans
- Green Infrastructure Concept Plans
- Worcestershire Minerals Local Plan
- District Local Development Plans
- Neighbourhood Plans
- Catchment Flood Management Plan

7. FUTURE SCOPING

7.1. Future Actions

Even with the resources which we had to apply in response to, recovery from and investigation of the major flood events over the last autumn and winter, a great deal of progress has been made with many aspects of flood risk management over the last 20 months. However, more work is required, not least that which has emerged from or been confirmed by the recent major flood events.

In addition, whilst the increased funding opportunities are extremely welcome, they all carry an increased expectancy and need for resources to be allocated in terms of both securing and delivering them.

Priorities for the next 12 months include:

- Production, publication and implementation of the Hagley and countywide formal investigation reports
- Continued implementation of the Hollywood formal investigation report recommendations
- Continued implementation of the Local Flood Risk Management Strategy Action Plan
- Review and refresh of the Local Flood Risk Management Strategy and accompanying action plan
- Assessment and investigation of future potential surface water flood risk
- Development and implementation of the local flood risk management plan for the new Redditch 'Flood Risk Area', as identified by the review of the Preliminary Flood Risk Assessment
- Implementation of the final year of the Worcestershire Natural Flood Risk Management Project
- seek to secure the next, six-year, countywide Natural Flood Management project
- Further development of the River Severn Partnership
- Completion of schemes already on the RFCC six-year Medium Term Plan
- Introduction and implementation of new schemes onto the next RFCC six-year Medium Term Plan
- Further development of plans for the STWL Asset Management Plan 7 (2020-2025)
- Ongoing delivery of the highway surface water drainage scheme programme
- Implementation of lessons learned from the major flood events and further development and testing of emergency plans
- Continued maintenance of FRM infrastructure including highway drainage and flood defences
- Further development and monitoring of the Register and Record of flood risk structures and features
- Further development and updating of the Register of FRM Schemes
- Further engagement with communities and landowners focusing on the development of local engagement and resilience
- Ongoing scrutiny of planning application drainage plans
- Exploration of options for the future maintenance of SuDS
- Further integration between economic growth, infrastructure development and flood risk management
- Continued liaison with communities to support existing flood action groups and establish new ones in areas at risk of flooding

APPENDIX 1. RISK MANAGEMENT AUTHORITY ROLES

Risk Management Authority	Core flood risk management role
Environment Agency	Main rivers, the sea and reservoirs
Water Authority (STWL)	Sewerage system
Lead Local Flood Authority (WCC)	Surface water, groundwater, ordinary watercourses, Local Flood Risk Management Strategy, local leadership
Highway Authority (WCC)	Flooding caused by rain falling on the highway, highway drainage
District Councils (BDC, MHDC, RBC, WCityC, WDC, WFDC)	Ordinary watercourses
Internal Drainage Board (LSIDB)	Ordinary watercourses

APPENDIX 2. ROLE OF THE LEAD LOCAL FLOOD AUTHORITY

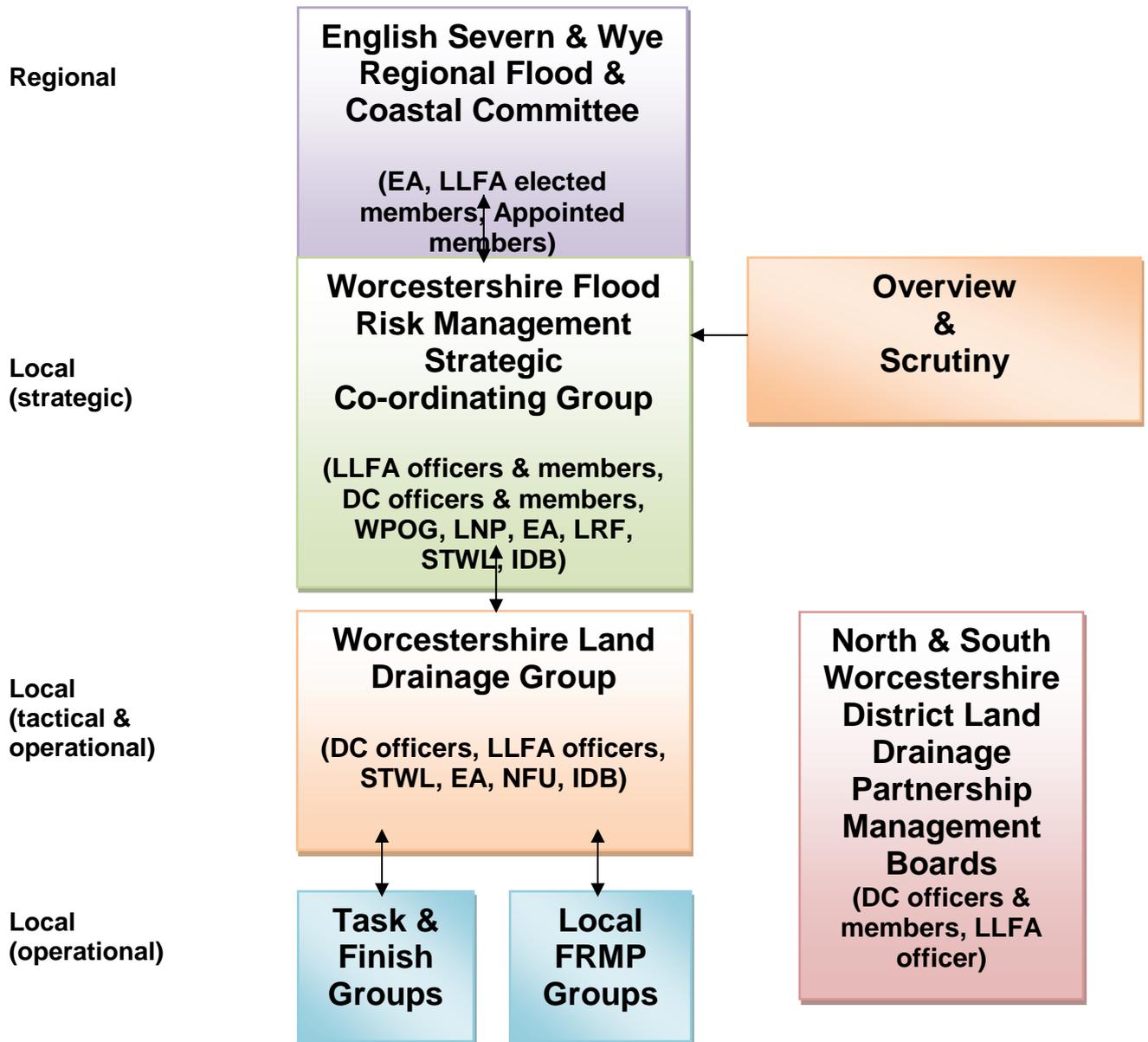
The Flood and Water Management Act 2010 (the Act) designated upper tier / unitary local authorities as Lead Local Flood Authorities (LLFA) and gave them a number of duties and powers including those listed below.

LLFA Role	Summary of requirements
Duty to publish a Local Flood Risk Management Strategy	Develop, maintain, apply and monitor a strategy for local flood risk management of the area.
Duty to investigate flooding	Co-ordinate the investigation of significant flood events.
Duty to produce a record and register of structures and features	Maintain a register and record of structures and features which have a significant impact on flood risk.
Power to designate flood risk structures and features	Designate structures and features that affect flooding in order to safeguard them.
Power to carry out works	Undertake works to manage flood risk from surface runoff and groundwater.
Duty & power to administer and enforce the Land Drainage Act with regard to Ordinary Watercourses	Discharge consent applications for significant changes to ordinary watercourses and take enforcement action under the provisions of the act as required.
Duty to respond to requests for scrutiny of planning application surface water issues	Respond to requests from LPAs to scrutinise and report on surface water issues within planning applications

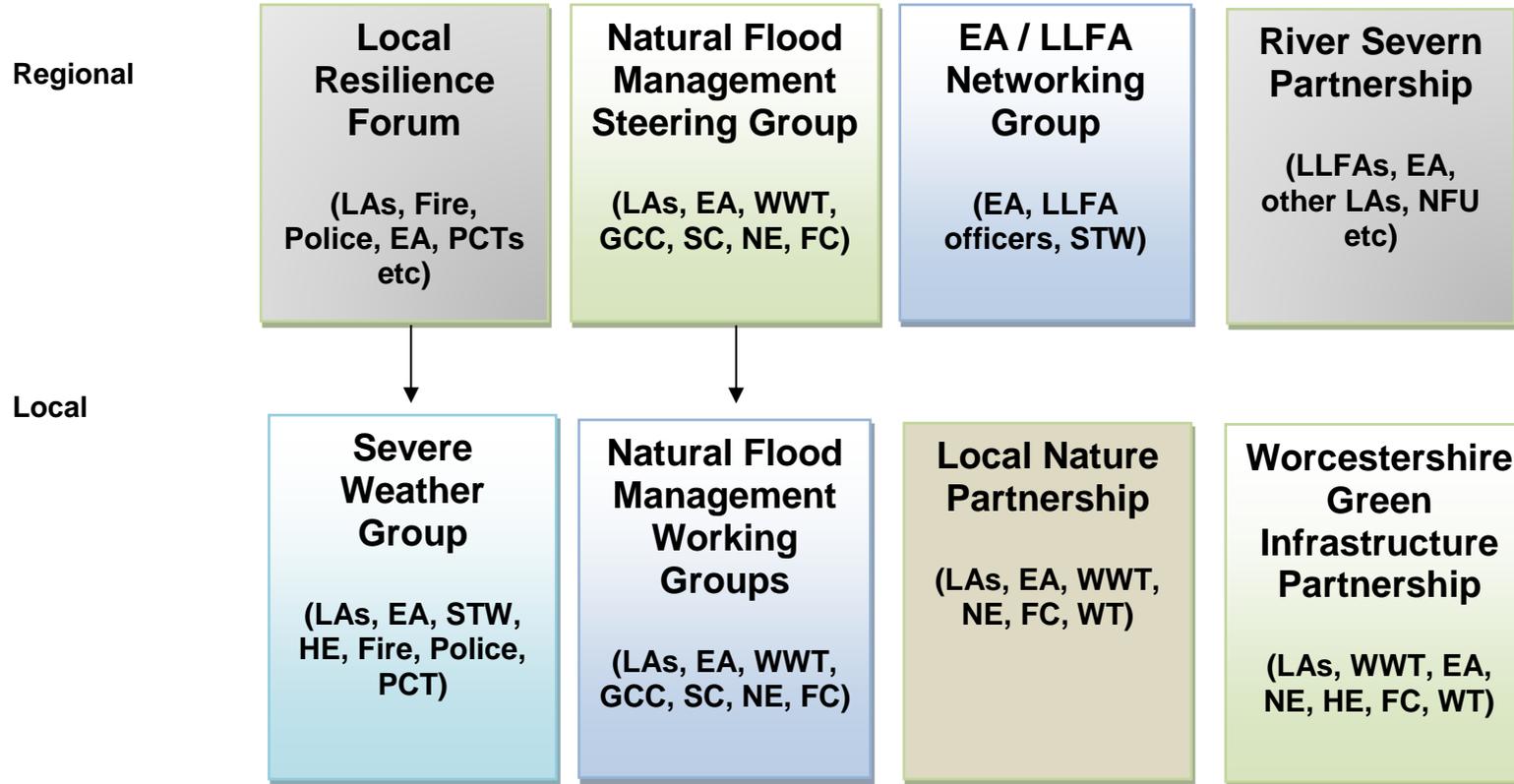
Under the Flood Risk Regulations (2009) LLFAs have some additional duties listed below.

LLFA Role	Summary of requirements
Duty to produce a PFRA	Produce a Preliminary Flood Risk Assessment by 2011 in partnership with the EA
Duty to review the PFRA every six years	Carry out a review in partnership with the EA
Duty to produce a map and Flood Risk Management Plan for 'Flood Risk Areas'	Production of Maps and Flood Risk Management Plans led by the EA supported by LLFAs

APPENDIX 3. MAIN FLOOD RISK MANAGEMENT GOVERNANCE GROUPS



APPENDIX 4. OTHER FLOOD RISK MANAGEMENT RELATED GROUPS



APPENDIX 5. WCC SUMMARY OF MAJOR FLOOD EVENTS

APPENDIX 6. EA STORYBOARD OF FEBRUARY 2020 FLOOD EVENT