



Local Flood Risk Management Strategy for Leicestershire

■ Draft for Public Consultation (June 2023)

BE FLOOD READY - LOGO TBC



Foreword



Name
Position

In 2015, the County Council produced the first Local Flood Risk Management Strategy for Leicestershire. Since then, great progress has been made towards better understanding and managing local flood risk. Leicestershire has continued to experience significant flooding incidents including the county-wide flooding in 2019/20 which resulted in flood damage to over 100 homes and businesses. We have witnessed how flooding devastates communities and the long-term impacts that this can have. This has helped to shape this strategy update.

Our ambition, through delivering the actions set out in this strategy update, is to contribute towards making Leicestershire a great place to live and work for now and for future generations. We want to ensure Leicestershire is safe and sustainable in terms of flood risk and implement actions which helps combat the impacts of climate change. We will aim to keep our communities informed and educated about flood risk and their responsibilities to encourage self-resilience, and to aid understanding about what is being done by responsible bodies to manage flood risk across the County. We also hope to contribute towards assisting in the recovery of nature in Leicestershire further contributing towards the County Councils Net Zero goal.

Though the County Council must produce this strategy, in its role as Lead Local Flood Authority, the Council does not have the power or responsibility to physically resolve or alleviate all flooding related matters. Managing flood risk requires a partnership approach between organisations and local communities. This strategy update has been delivered with the support of partner organisations and communities recognising that by working together and coordinating our actions, we can more effectively mitigate the impacts of future flooding. We will continue to work with all partners to maximise funding for helping to reduce flood risk across Leicestershire and our strategy update details how and where we will do this.

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Acronyms

To make the Strategy as readable as possible, the use of acronyms has been limited. Acronyms are also reintroduced within each section in which they are used.

LLFA	Lead Local Flood Authority
NFM	natural flood management
PFR	property flood resilience
RFCC	regional flood and coastal committee
RMA	risk management authority
SuDS	sustainable drainage systems

Introduction

The County Council are the Lead Local Flood Authority (LLFA) for Leicestershire. As LLFA, the County Council are responsible for developing, maintaining, and monitoring the Local Flood Risk Management Strategy for Leicestershire ('the Strategy'). The first Strategy was published in 2015. This revised and updated second version was published in 2023. The Strategy includes an update to the principles, objectives and measures by which local flood risk will be managed. It is consistent with the [National Flood and Coastal Erosion Risk Management Strategy for England](#) ('the National Strategy') published in 2020.

The Strategy is focused on the management of the local flood risk sources of surface water, groundwater, and ordinary watercourses. It is divided into the following main sections.

Introduction

Introduces the Strategy, including the principles by which local flood risk will be managed.

What is local flood risk?

Explains local flood risk sources, and other sources of flood risk which may interact with these

Roles, Responsibilities and Partnerships

Introduces the roles and responsibilities of risk management authorities (RMAs) and others involved in local flood risk management. Key partnership working arrangements are also explained.

Objectives sections

Sections explaining each of the five objectives, and the measures proposed to deliver them. The application of the Strategy principles is explained at the end of each objective section.

Creation, Consultation, Monitoring and Review

How the current version of the Strategy was created, and how it will be monitored and reviewed.

A summary of the Strategy is provided on the County Council's website.

Supporting information

The Strategy is supported by the following key documents. Further related or supporting information is signposted throughout this document.

Action Plan

The Action Plan lists the measures proposed to achieve the Strategy objectives. It includes timescales, costs, benefits, and how measures are to be paid for. A summary of progress against the former Strategy Action Plan is also provided.

Assessment of local flood risk

This is a 'live' assessment of local flood risk, which will be updated periodically as new information becomes available. It includes consideration of the impacts of climate change upon flood risk in Leicestershire.

LLFA policies

The policies describe how the County Council as LLFA will fulfil certain duties or exercise legislation. Each policy is introduced in the relevant objective section.

- Formal Flood Investigations Policy
- Asset Register and Record Policy
- Ordinary Watercourse Regulation and Culvert Policy

Strategic Environmental Assessment

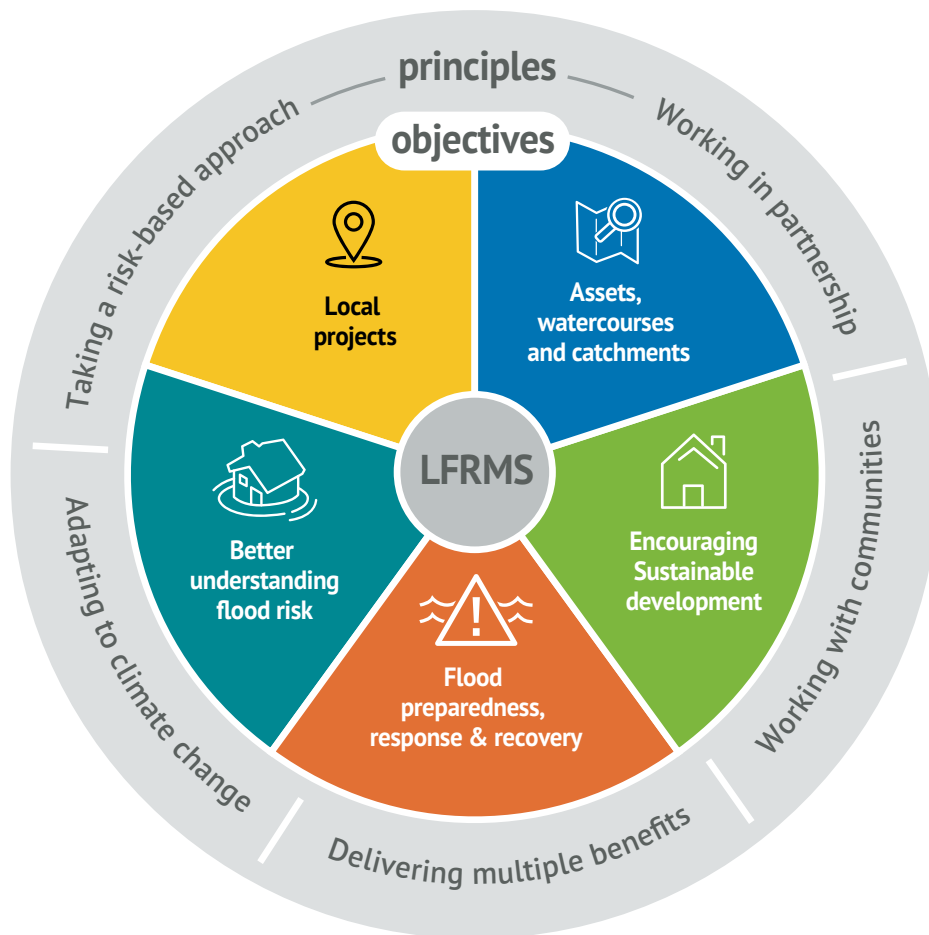
The Strategic Environmental Assessment meets the requirements of the Environmental Assessment of Plans and Programmes Regulations 2004 (the 'Strategic Environmental Assessment Regulations'). It provides an assessment of the Strategy objectives and measures against Assessment objectives with economic, environmental, and social scope. Appendix B provides the policy context for the Strategy, including related plans and legislation.

Habitat Regulations Assessment

The Habitat Regulations Assessment meets the requirements of the 'Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019 ('the Habitat Regulations Assessment Regulations'). It considers the impacts of the Strategy upon European designated sites, such as the Mease Special Area of Conservation.

Principles, Objectives and Measures

The Strategy 'wheel' displays headings for the five objectives, which will be implemented through the Strategy measures, in accordance with the five principles.



Strategy Principles and Objectives

Principles

The five principles are intended to apply across all local flood risk management work. They help to ensure consistency with legislation, the National Strategy, and other plans.

Objectives

The five objectives describe the main ways in which local flood risk is managed in Leicestershire. They are strategic objectives, implemented through the measures.

Measures - What we are doing

The measures detail the actions taken to implement the objectives. Most are included within the objective sections, and all are included within the Action Plan.



The Strategy principles

1

Working in partnership

- A wide range of organisations are involved in managing flood risk from different sources in Leicestershire. Effective partnership working is therefore required.
- Partnership working also helps to maximise other associated benefits, such as improvements to biodiversity and habitats.
- Practical examples of partnership working include sharing data, and partnership projects which address flood risks from multiple sources.

2

Working with communities

- The ambition of the National Strategy is for a nation ready to respond and adapt to flooding; by helping local people understand their risk, know their responsibilities, and how to take action.
- This is ambition shared in Leicestershire, as the County Council and others engage and work with communities across flood risk management actions.

3

Delivering multiple benefits

- Flood risk management is not considered in isolation. The National Strategy highlights multiple benefit opportunities of flood risk management actions, such as environmental enhancements, sustainable growth, and climate change mitigation.
- It is a requirement to assess how the Strategy can contribute to the achievement of such benefits. This was initiated through independent Strategic Environmental Assessment, which has helped to identify potential benefits of measures. These will be monitored alongside the Strategy Action Plan.

4

Adapting to climate change

- In May 2019 the County Council [declared a climate emergency](#), in recognition of the local and wider impacts of climate change.
- Flood risk is increasing with climate change, with an increased likelihood of wetter winters, and more intense rainfall events.
- Core ambitions of the National Strategy are for climate resilient places, and for development to be resilient in tomorrow's climate; these ambitions are shared in Leicestershire. Adapting to a changing climate will be considered across all measures taken, using the best guidance available to do so.

5

Taking a risk-based approach

- Risk based decision making will be supported by use of the best evidence and guidance available. A broad range of evidence is considered, including the valuable local knowledge provided by communities.
- This approach also extends to other benefits. For example, risk assessing the effects of watercourse management activities upon public safety.
- Organisational resources for local flood risk management are finite. A risk-based approach assists prioritisation of these resources. Communities where lots of properties are at risk from internal flooding are likely to be prioritised (see the Assessment of Local Flood Risk).

What is Local Flood Risk?

What is flood risk?

The definition of 'risk' is the combination of the probability (likelihood or chance) of an event happening and the consequences (impact) of it occurring. Floods can happen often or rarely, have minor or major consequences, and positive or negative impacts. Where the probability and the consequences of flooding are high, then an area is at a high risk of flooding.

Did you know?

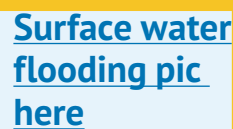
Flood Risk = Probability x Consequences

Local Flood Risk in Leicestershire

The Flood and Water Management Act defines local flood risk as flood risk from surface water, groundwater, and ordinary watercourses. The County Council as Lead Local Flood Authority (LLFA) coordinate the management of these risk sources. The **Assessment of Local Flood Risk** document which supports the Local Flood Risk Management Strategy (the Strategy) provides a more detailed assessment of risk from each source.

Surface water

Surface water occurs when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead; the water has not yet entered a watercourse, drainage system or public sewer. Flooding normally occurs during intense rainfall events, but can also occur during less severe rainfall events when assets or infrastructure are not able to drain water away effectively (i.e., they are at capacity or they may be obstructed).



[Surface water flooding pic here](#)

Typically, surface water flood events have localised effects, impacting properties near to where the rain fell and for a short amount of time. The flooding can be in the form of flow paths, as water flows downhill, or pooling through accumulation at low points. Risk is increased by impermeable surfaces, which are more likely in urban areas, but can also be where ground is saturated, or baked hard due to hot weather.

Surface water flood risk is extensive across the County. The National Risk of Flooding from Surface Water mapping provides a good indication of areas at risk from surface water. This is viewable through the [Check the long-term flood risk for an area in England](#) service.

Additionally, Market Harborough, Loughborough and Hinckley and Burbage have been identified as 'nationally significant' surface water flood risk areas. Parts of the Leicester Surface Water Flood Risk Area also extend into Leicestershire (e.g., Oadby). The flood risk areas can be viewed on the [Environment Agency Flood Plan Explorer](#).

Did you know?

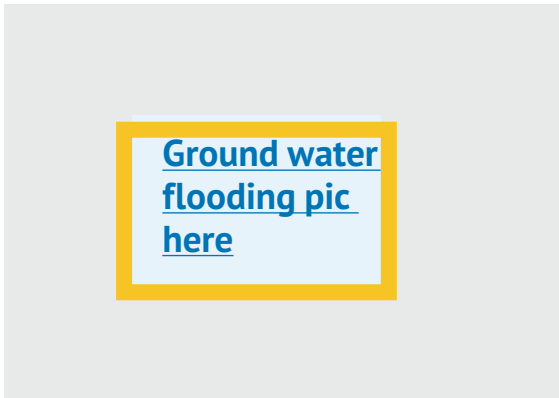
Flood water can be positive in some areas providing much needed nutrients and water to land

Ordinary watercourses

Ordinary watercourses include ditches, streams and culverts that are not classified as main river by the Environment Agency; they can also be ditches that are only wet for part of the year. Rainfall within a watercourse's catchment can cause them to exceed their capacity, leading to flooding. Blockages or obstructions can increase the risk of local watercourse flooding. Intense rainfall (e.g., thunderstorms) is more likely to cause flooding in small and/or urbanised catchments. Watercourses fed by larger and/or rural catchments are more likely to be affected by longer winter storms or seasonally wet periods of weather, as the ground becomes saturated and less able to absorb more rainfall.

Groundwater

Groundwater flooding can occur when the level of water within the rock or soil (known as the water table) rises. It is most likely following extended periods of seasonally wet weather. The majority of Leicestershire is situated on geology and soils with properties that are associated with low groundwater flood risk, such as clays. The LLFA are not aware of any significant flooding incidents where groundwater has been the main source of risk.



[Ground water flooding pic here](#)

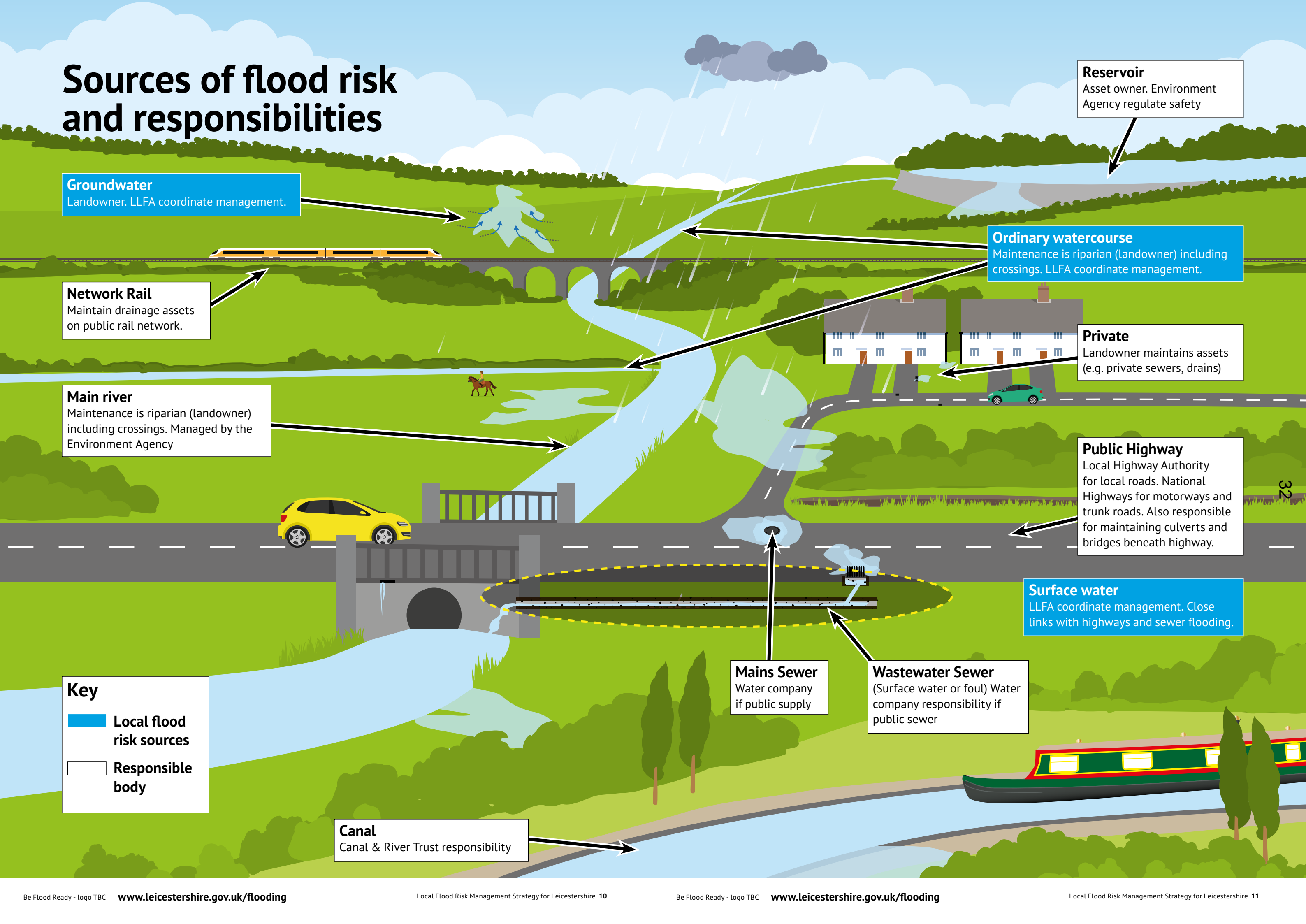
Recent Historic Flooding

The County Council as LLFA holds historical flood event data collated from various sources. The [Preliminary Flood Risk Assessment](#) for Leicestershire highlighted records of approximately 1,300 local flood events that occurred across the County between 1996 and 2011. The most significant recent historical flood events occurred in 2012, 2013, 2016, 2019 and 2020. The Autumn and Winter of 2019-20 was an extremely wet period with heavy rainfall and storms causing multiple flooding events. The County Council received around 100 reported incidents of confirmed internal property flooding and more than 500 enquiry reports relating to flooding issues.

Other sources of flood risk

There are other sources of flood risk which interact with local flood risk as per the illustration over the page. For more information, please visit the flood risk Leicestershire website.

Sources of flood risk and responsibilities

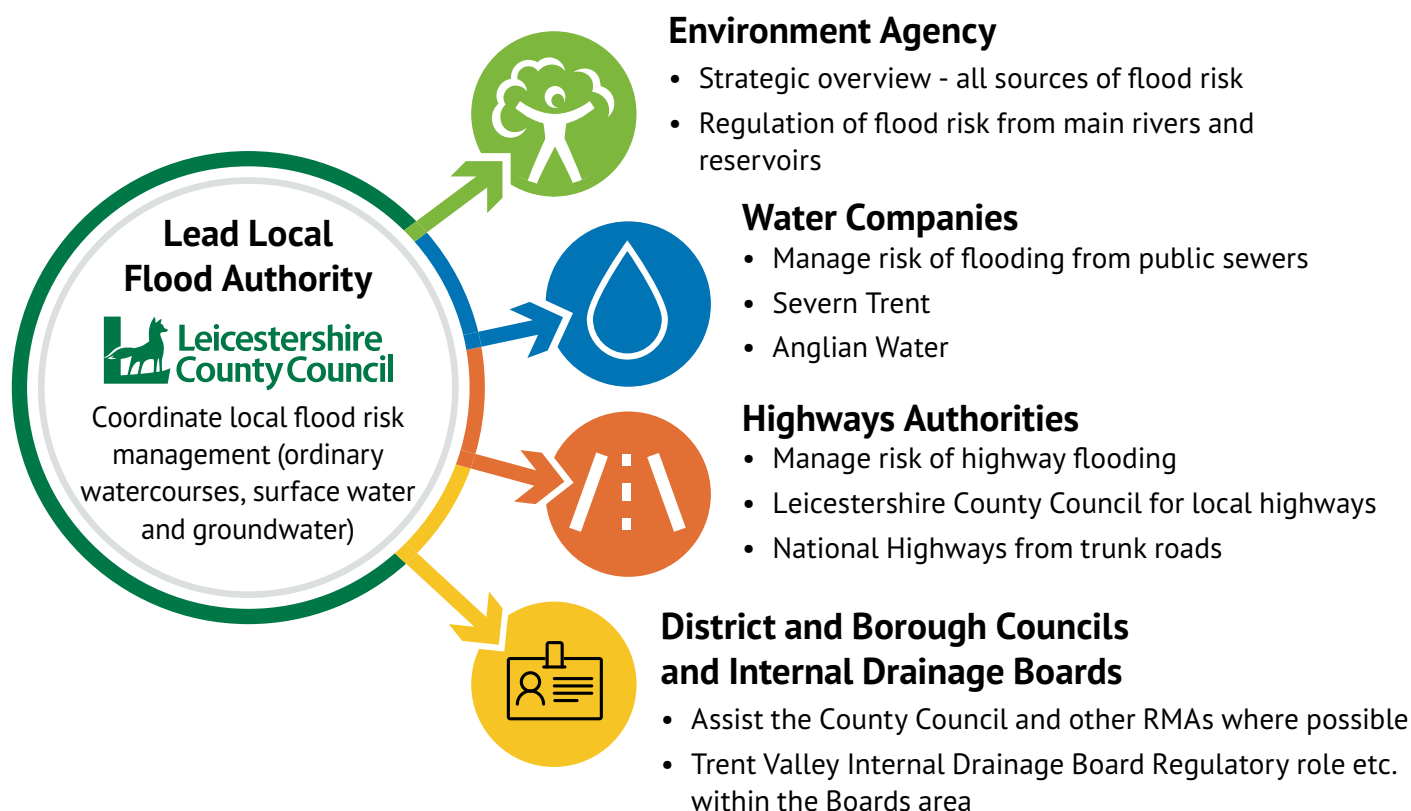


Roles, Responsibilities and Partnerships

Many different organisations are involved in flood risk management; there is no one organisation who has the means or authority to manage risk on its own. All organisations therefore need to work in partnership. It is also crucially important that local communities understand their flood risk, responsibilities, and how to take action.

Risk Management Authorities

Leicestershire Risk Management Authorities



The Flood and Water Management Act 2010 requires the County Council as the Lead Local Flood Authority (LLFA) to establish arrangements to bring together all relevant bodies to work as partners in the management of local flood risk. This approach has been further strengthened through the Localism Act 2011 and the 'Duty to cooperate'. Both Acts recognise the important roles played by district and borough councils, internal drainage boards, highways authorities and water companies. It identifies these bodies, together with the Environment Agency as Flood 'Risk Management Authorities' (RMAs). The RMAs in Leicestershire are illustrated above. Their roles and responsibilities are introduced on the next page, and explained further in the objective sections.

Lead Local Flood Authority

As **LLFA**, the **County Council** is responsible for coordinating the management of local flood risk. The role includes responsibilities to develop and apply the Local Flood Risk Management Strategy ('the Strategy'); develop and maintain the Asset Register and Record; regulate the management of ordinary watercourses; be statutory consultee for major planning applications, and investigate significant flooding incidences.



Environment Agency

The **Environment Agency** has a strategic overview role for all sources of flooding. They are responsible for regulating main rivers and reservoir safety. The Environment Agency work in partnership with the **Met Office** to provide flood warnings and are involved in emergency response. They are also the water quality & environmental regulatory body, as well as regulating works on or near main rivers through the Flood Risk Activity Permitting regime. The Environment Agency is a statutory consultee on certain planning applications and the organisation oversees the production of regional [Flood Risk Management Plans](#). They are the lead government organisation for the protecting the environment through the delivery of the regional [River Basin Management Plans](#), and other environment protection work and regulation.



Water and Sewerage Companies

Two Water and Sewerage Companies operate in Leicestershire: **Severn Trent, and Anglian Water**. They are responsible for management of the public sewer network and have a role in emergency response. They also produce regional [Drainage and Wastewater Management Plans](#).



Highway Authorities

National Highways for trunk roads (e.g., Motorways) and the **County Council as Local Highway Authority** for other public highways. They are responsible for maintaining public highways (including watercourses running under highway) and managing risk of highway flooding.



District and Borough Councils

The seven District and Borough Councils (**Blaby, Charnwood, Harborough, Hinckley & Bosworth, Melton, North West Leicestershire, and Oadby and Wigston**) have roles in relation to emergency planning and recovery after a flood event. They are also Local Planning Authorities, responsible for carrying out specific planning functions.



Internal Drainage Boards

There is a small part of the **Trent Valley Internal Drainage Board** within Leicestershire. The Board are responsible for regulation of watercourse management within this area. The Board also provide drainage related planning advice to the Melton Borough Council Local Planning Authority for proposed development within the board's jurisdiction.



Other organisations

There are many other organisations, partners and bodies who are also involved in local flood risk.

River trusts

The rivers trusts active in Leicestershire are [Trent Rivers Trust](#), [East Mercia Rivers Trust](#) (River Welland Catchment), and [Severn Rivers Trust](#). The relevant work of the trusts includes coordinating catchment partnerships, community engagement with an environmental focus, and project development and delivery, particularly natural flood management.

Canal and River Trust


The [Canal and River Trust](#) are responsible for managing flood risk from Canals. Canals are generally designed to enable them to cope with flood waters. These artificial watercourses rarely flood because they contain water control locks. Most canals have overflow sluices that run off into small rivers and streams. High intensity rainfall however can cause canal flooding.

Emergency responders

Emergency responders are involved in preparing for and responding to incidences of flooding. Their role is further described in the Objective 3 section. See also the LLR Prepared in Partnerships section.

The role of individuals and communities

Individuals and communities have an important role to play across flood risk management actions. The roles shown below are expanded upon in the objective sections. It is crucially important that individuals and communities understand their flood risk, responsibilities, and how to take action.

 Assets, watercourses, and catchments	<p>Maintenance of private assets such as household drains, and reporting asset issues (e.g., blocked gullies). Riparian landowners maintaining their stretch of watercourse. Landowners supporting natural flood management where possible.</p>
 Encouraging sustainable development	<p>Engaging with the planning process by providing local knowledge of flood risk management and drainage issues. Engaging in neighbourhood planning.</p>
 Flood preparedness, response and recovery	<p>Property flood plans; community flood action plans; signing up for flood warnings; becoming or supporting local flood wardens; engaging with flood investigations.</p>
 Better understanding flood risk	<p>Understanding risk to your property or community; providing local knowledge in support of flood studies.</p>
 Local projects	<p>Supporting measures such as property flood resilience and natural flood management; helping others in the community to be informed of project progress.</p>

Partnerships

The Flood and Water Management Act 2010 requires the relevant authorities to co-operate with each other in exercising their roles under the Act. Flooding comes from many sources, is managed by multiple agencies and is not discriminate of administrative boundaries. Organisations and agencies therefore need to work together to manage risk. Partnership arrangements help to deliver effective cross-organisation and cross boundary work. They can enhance the coordination of policy and actions. They can also provide strong accountability and transparency, through a clear demonstration of cooperation. Key partnership arrangements are shown in the diagram below.



Key partnerships

Regional Flood and Coastal Committees (RFCCs)

[RFCCs](#) are committees established and managed by the Environment Agency under the Flood and Water Management Act 2010. The committees are made up of elected members (appointed by LLFAs) and independent members with relevant flood risk management experience. They meet to:

- ensure there are coherent plans for identifying, communicating, and managing flood and coastal erosion risks across catchments and shorelines;
- promote efficient, targeted, and risk-based investment in flood and coastal erosion risk management, that optimises value for money and benefits for local communities (this includes recommending the approval of the annual programme of flood and coastal risk management work in their region, and setting a local levy that supports local priorities); and
- provide a link between the Environment Agency and others, promoting a mutual understanding of flood and coastal erosion risks.

The County Council is a committee member at both the [Trent RFCC](#) and [Anglian Northern RFCC](#), whilst a small area of Leicestershire is situated within the [English Severn and Wye RFCC's](#) jurisdiction.

River Catchment Partnerships

The [Catchment Based Approach](#) is a community-led approach that engages groups from across society to help improve water environments, managed through catchment partnerships. By working together, partnerships members have the capacity to access funding from a wide range of sources. The main partnerships with extents in Leicestershire are the:

- [Soar Catchment Partnership](#);
- [River Mease Partnership](#); and
- [Welland Valley Partnership](#).

RMAs are actively involved to help integrate local flood risk management objectives into the work of partnerships, and contribute towards the delivery of wider objectives.

LLR Prepared (the Local Resilience Forum) & sub-groups

[LLR Prepared](#) is the Local Resilience Forum for the policing area covering Leicester, Leicestershire & Rutland. LLR Prepared fulfils statutory responsibilities arising from the Civil Contingencies Act 2004, which requires specific organisations within a policing area to work together to prepare for, respond to and recover from different emergencies. Its membership is made up of emergency responders. A Flooding Sub-group of the Forum is hosted by the Environment Agency and meets quarterly.

Leicestershire Flood Risk Management Board & sub-groups

The Flood Risk Management Board is a forum of RMA officers and others formed to develop a strategic, multi-agency approach to flood risk management in Leicestershire. The Board oversees the development and application of this Strategy. It facilitates discussion and cooperation around local flooding incidences, resource optimisation, lessons learnt, working together and reviewing and writing complimentary plans. It is important to maintain this framework of cooperation between the partners outlined above to ensure that the roles and responsibilities of all stakeholders are fully understood. Sub-groups of the Board include the Flood Enquiries Partnership where RMA's discuss enquiries requiring a partnership response,.



What we are doing

Leicestershire LLFA will continue to coordinate the Leicestershire Flood Risk Management Board.

Community flood partnership groups

There are several community level flood partnership groups across the County. This includes those established by local communities (often called flood action groups), or by RMAs (e.g., surface water management plan partnerships). These groups often bring together relevant RMAs, other partner organisations, and community representatives to work in partnership locally..

Networking, skills and knowledge sharing groups

There are several networking skills and knowledge sharing groups which the LLFA or other RMAs attend. For example, the LLFA regularly attends the following groups:

- [Association of Directors of Environment, Economy, Planning and Transport: Flood and Water Management Group](#) (national)
- [Midlands Highway Alliance Plus: Flood and Water Management Service Improvement Group](#) (regional)
- LLFA Networking Meetings hosted by the Environment Agency (regional)

These partnerships are important for local flood risk management strategically, as they can provide opportunity to:

- discuss how existing or new requirements will be fulfilled;
- be informed regarding upcoming challenges (e.g., changes in policy) and opportunities (e.g., new funding sources);
- view examples of good practice and discuss lessons learnt; and
- agree collaborative responses to national consultations.



Objective 1:

Assets, Watercourses and Catchments

To manage local flood risk through the effective management of flood risk assets, watercourses, and catchments.

The condition of Leicestershire's watercourses and flood risk assets is vital for local flood risk management. Catchments can cross administrative boundaries. Watercourses can also fall within the land of various landowners and therefore be the responsibility of multiple parties. Raising awareness of these responsibilities is a key part of managing flood risk from watercourses, and a partnership approach is required to help achieve it. Watercourses and catchments also need to be managed with awareness of environmental impacts and benefits.



Case Study

Community Action - Diseworth Flood Action Group

- In 2021, volunteers from the local community set up the Diseworth Flood Action Group. With help from local farmers, the group assisted riparian landowners with watercourse maintenance to reduce risk of blockages that were increasing risk of flooding.
- The group also installed watercourse flow gauges to better understand risk and improve local resilience in the event of bad weather.
- The LLFA and others are working with the action group with plans to further alleviate reduce risk and increase community resilience. See the [Parish Council website](#)



Photos: Watercourses
before (top) and after (bottom)
following management.

Who is involved?

Are you a Riparian landowner? Further information and guidance for riparian landowners is available on the GOV.UK [Owning a watercourse](#) page and the [County Council's Ordinary watercourse regulation](#) page.

Property owners

Management and maintenance of private drainage assets (e.g., downpipes and driveway drains)



Riparian landowners

- Landowners with watercourses running through or alongside their land, who are either partially or wholly responsible for maintenance.
- This can include Councils and other organisations where they own land.



Lead Local Flood Authority (the County Council)

- Regulating ordinary watercourse management
- Permissive enforcement powers for unconsented works or works that may increase flood risk.
- Maintain the Asset Register and Record of significant flood risk assets



Local Highway Authority (the County Council)

Management and maintenance of drainage assets that serve to remove water which falls on public highway, and any culverts under highway (excluding trunk roads, managed by National Highways)



Water and Sewerage Companies

Management of public sewers, the design and condition of which is important for reducing the risk of surface water flooding.



Environment Agency

- Regulation of works carried out either on or adjacent to main rivers.
- Regulating authority for pollution and environmental damage (including watercourses).
- Catchment management role (River Basin Management Plans)



Catchment Partnerships

Coordinate the delivery of environmental objectives for catchments, alongside other benefits such as flood risk management



Trent Valley Internal Drainage Board

Regulation of watercourses within the Boards area, of which a small part is within Leicestershire, around Bottesford, Redmile and Harby



District & Borough Councils

Can be asset managers or riparian landowners where they own land. Some permissive regulatory powers.



Watercourses

A key source of local flood risk in Leicestershire is from ordinary watercourses; these can be ditches, streams, culverts and even watercourses that are only wet for part of the year. 'Ordinary' watercourses are those that are not classified as main river by the Environment Agency.

Riparian responsibility

Riparian landowners are responsible for the maintenance of watercourses passing through or alongside the boundary of their land. Further information on riparian responsibility, and guidance for riparian landowners is available on the GOV.UK '[Owning a watercourse](#)' page and the [Regulation of activities on watercourses page](#). Riparian landowners can also contact the LLFA for further advice and support.



What we are doing

The LLFA will signpost and make available guidance for riparian landowner and proactively disseminate this in locations of identified priority.

Case Study

Watercourse Management - The Meadow Brook, Appleby

- Appleby Magna flooded in November 2019, and again in February 2020. A [formal flood investigation](#) was published
- During the investigation, several watercourse obstructions were identified on key assets. Guidance was provided to riparian landowners on how to remove blockages and maintain their section of watercourse. North-West Leicestershire District Council also carried out some watercourse maintenance
- Key assets have been added to the Asset Register, and all partners are now working together to identify further works to help reduce flood risk to this community, such as installing natural flood management in the upper catchment.



Photos: Watercourses before (top) and after (bottom) following management.

Regulation

The County Council as LLFA is responsible for regulating the management of ordinary watercourses, with various permissive powers defined by the Land Drainage Act 1991; further information on the approach to watercourse regulation can be found in the Watercourse Regulation and Culvert Policy, and supporting guidance available on the [Regulation of activities on watercourses page](#).

Did you know?

Should you plan to alter or carry out work near to a watercourse, you may need approval from the LLFA. Go to the website for more info.

The County Council as LLFA aims to ensure watercourses are managed in a way which balances flood risk management with other needs, such as the biodiversity and amenity benefits they can provide. This includes reducing culverting and encouraging the restoration of watercourses, including through deculverting.



What we are doing

The LLFA will regulate ordinary watercourses in accordance with the Leicestershire Ordinary Watercourse Regulation and Culvert Policy and supporting guidance.

Case Study

River Restoration - Leicester Golf Centre and Racecourse

The Wash / Saffron Brook flows through Oadby into Leicester. The '[Saving the Saffron Brook](#)' project aims to restore parts of the heavily modified river ecosystem via direct channel improvements, re-naturalisation and floodplain reconnection, whilst engaging with local communities to bring them closer to nature. Part of this work included removal of four culverts and other channel improvement at Leicester Golf Centre and Leicester Racecourse, coordinated by [Trent Rivers Trust](#). The plans were agreed with landowners, and checked and consented by the LLFA in their regulatory consenting role.



Assets

There are a broad range of existing assets that can affect flood risk in Leicestershire in a positive or negative way. For example: culverts, screens, sustainable drainage systems (SuDS), natural flood management measures and highway drainage. A risk-based approach is taken towards asset management, with more resources focused upon assets which have a significant effect upon local flood risk.

Section 21 Asset Register

The LLFA is required by Section 21 Flood and Water Management Act 2010 to maintain an asset register and record of structures or features which have a significant effect (positive or negative) upon flooding in Leicestershire. The Flood Risk Asset Register and Record Policy details the approach taken in Leicestershire, including defining why assets are added. The Register and Record are not intended to include all flood risk assets, but those with the most significant effects; RMAs are likely to hold more detailed records of assets they manage or regulate. The Register and Record help to inform asset inspection and maintenance, and the development of business cases for asset management funding.



What we are doing

The LLFA will continue to maintain the Flood Risk Asset Register and Record in accordance with Leicestershire's Flood Risk Asset Register and Record Policy.

Case Study

Trash Screen - Rugby Close, Market Harborough

- In December 2013, during heavy rainfall a culvert at Rugby Close became blocked with debris, causing flooding to homes.
- Following a [formal flood investigation](#), a trash screen was installed by Harborough District Council, to reduce the risk of future blockages. The screen is on the Asset Register as it has significant effect upon risk.
- Harborough District Council regularly cleanse the screen before and during rainfall.
- Local residents have set up a social media group to enhance community resilience.



Photo: Rugby Close trash screen

Highway drainage assets

The County Council in their Local Highway Authority (LHA) role are responsible for the management and maintenance of drainage assets on or under public highway (excluding motorways and trunk roads managed by National Highways). These assets such as gulley pots, gulley grates, culverts, bridges, and lateral flow pipes that are installed to deal with water that falls directly on the highway only or flows underneath. The LHA take a risk-based approach to asset maintenance, as defined in the [Leicestershire Highways Infrastructure Asset Management Plan](#).



What we are doing

The Local Highway Authority will continue to maintain highway drainage assets in accordance with the Leicestershire Highway Infrastructure Asset Management Plan.

Case Study

Highway Assets - Gully cleansing

There are over 130,000 gullies on local public roads in Leicestershire. Gullies are cleansed by the LHA's highway contractors using a risk-based approach, which uses various data such as past and predicted flooding. This means some gullies will be cleansed more often than others. [Report a blocked roadside drain or gully](#) on the County Council's website.



Photo: gully cleansing in Leicestershire

Privately maintained assets

Homeowners and businesses are usually responsible for maintenance of private flood risk and drainage assets, such as:

- Private sewer connections to public sewer
- Roof drainage
- Threshold drains
- Property flood resilience measures

The importance of good maintenance of such assets will be promoted as part of work to develop initiatives to enhance community preparedness and resilience to flooding (see Objective 3 - community preparedness and local community initiatives). Please note in some instances maintenance responsibility may be passed on to tenants.

Catchments

Catchments are the areas of land (urban, rural or both) draining into a watercourse. The way catchments are managed affects the peak and volume of watercourse flow; therefore, they are an important consideration when managing the risk of flooding from ordinary watercourses. Effective catchment management can only be achieved when all partners work together strategically and share information. Land in Leicestershire also provides many other benefits to society (e.g., food production, housing, industry), which are also duly considered by RMAs and other partner organisations in their work.

Environmental catchment initiatives

Natural flood management (NFM) involves using various techniques to restore or mimic the natural functions of rivers, floodplains, and the wider catchment. The main aims of NFM are to store water in the catchment, and slow the rate at which water runs off the landscape into watercourses and rivers, to help reduce flood risk to communities downstream. NFM is often delivered as a part of local projects (see Objective 5), however there are opportunities for implementation more widely across Leicestershire's catchments. One of these countryside stewardship schemes, where landowners can access funding to deliver and maintain NFM measures. The [National Strategy](#) emphasises maximising the flood risk management benefits of such schemes; this is also the aim in Leicestershire, particularly upstream of at-risk communities.



What we are doing

The LLFA with support from catchment partnerships will seek to maximise opportunities for natural flood management across Leicestershire.

The [Catchment Based Approach](#) is a community-led approach that engages groups from across society to help improve water environments, managed through catchment partnerships (see Partnerships section for further information). Much of RMAs catchment based work is integrated into the work of catchment partnerships. There is potential to develop and deliver multiple benefit projects that benefit the environment, reduce flood risk and improve the lives of people.



What we are doing

The LLFA will work with catchment partnerships and landowners to integrate environmental and flood risk management workstreams.

Case Study

The Catchment Approach - The River Mease Partnership

The River Mease is a Special Area of Conservation, which has not been meeting key environmental objectives. The top half of the catchment is in North-West Leicestershire, where communities such as Packington and Appleby Magna are at risk of flooding. The LLFA is therefore working with the [River Mease Partnership](#) to achieve both environmental and flood risk management catchment wide benefits. The potential for NFM has been assessed upstream of Appleby Magna, Packington and Moira.



Photo caption

[Local Nature Recovery Strategies](#) are a system of locally led, decision-making tools which establish priorities and actions to drive nature's recovery, whilst providing wider environmental benefits. The County Council are the responsible authority for developing and maintaining the Local Nature Recovery Strategy for Leicestershire. It will include local habitat maps that will guide and inform planning and nature recovery activities, and the approach to biodiversity net gain requirements. It is anticipated that the Strategy and habitat maps this will help in the delivery of both environmental improvements and local flood risk management'.

Catchment work addressing multiple flood risk sources

Risk management authorities also take a catchment-based approach managing interactions between local flood risk and other sources. [Flood Risk Management Plans](#) are regional strategic plans which set out how organisations, stakeholders and communities will work together to manage flood risk in England, including nationally significant flood risk areas.

There are four Flood Risk Management Plan measures related to surface water flood risk areas in Hinckley and Burbage, Loughborough, Market Harborough, and Oadby (Leicester) which are also included as Strategy measures within the Action Plan.

Risk management authorities are also supporting Severn Trent and Anglian Water with the production and delivery of [Drainage and Wastewater Management Plans](#). The plans assess current and future capacity, pressures, and risks to sewer networks, such as climate change and population growth. There are links with local flood risk sources, particularly surface water.

Principles

Examples of how the Strategy principles are followed through the Assets, Watercourses and Catchments Objective:

1

Working in partnership

- Asset data is shared between partners where required.
- Watercourse regulation is coordinated with other processes (e.g., environmental, highway management).
- The LLFA and others are active members of catchment partnerships.

2

Working with communities

- Guidance is available or signposted on how to fulfil riparian responsibilities and how to maintain privately owned assets.
- Communities can report observed issues with assets to relevant RMAs (e.g., blocked gullies to the highway authority).
- Partners work with local landowners upstream of flood risk areas to deliver NFM.

3

Delivering multiple benefits

- The Watercourse Regulation and Culvert Policy promotes the protection and where possible restoration of watercourses, minimising hard engineering and encouraging nature-based solutions.
- NFM measures (e.g., tree planting) provide benefits for the environment and carbon sequestration.
- Managing catchments to alleviate flood risk is balanced with other benefits, such as food production.

4

Adapting to climate change

- The impacts of climate change are considered in watercourse regulation, for both existing assets, and the design of new assets.
- NFM measures if widely implemented can help build resilience to the effects of climate change upon flood risk within catchments.

5

Taking a risk-based approach

- Policies and internal processes help support consistent and fair risk-based watercourse regulation.
- The asset register helps to direct recourses towards assets with most significant effects.

Objective 2:



Encouraging Sustainable Development

To manage local flood risk through encouraging sustainable development

The National Strategy sets out a long-term ambition for climate resilient places. In Leicestershire, local flood risk to all future development should be limited as much as possible, and development should not increase the risk of flooding elsewhere. The [Strategic Growth Plan](#) sets out the aspirations for delivering growth in Leicestershire up to 2050 to support population change, economic growth and other needs. Considerable development is expected. There is a need to be ready for challenges and opportunities this presents for local flood risk management.



Case Study

Sustainable Urban Extension – New Lubbethorpe

New Lubbethorpe Sustainable Urban Extension is a major development area in Blaby District, comprising of over 4000 homes and associated infrastructure. The allocation of land for development was approved through the [Blaby District Local Plan](#), adopted in 2013. The first homeowners moved in during 2017. Construction work is still ongoing.



The Blaby Local Plan includes policies related to the provision of Sustainable Drainage Systems (SuDS), and retainment of watercourse corridors. Multi-benefit SuDS have been incorporated throughout the development so far. For example, 'Pond 1' pictured above provides surface water storage, water quality treatment and wetland habitat. Amenity benefits for local residents are also provided; the boardwalk features and fencing allow the local community view and enjoy the pond area safely.

Flood risk management and sustainable development

Planning applications

As local planning authorities, the seven district and borough councils are responsible for determining most planning applications in Leicestershire. Since April 2015, the County Council as Lead Local Flood Authority (LLFA) has been a statutory consultee for surface water, for all major applications. The LLFA make recommendations to the local planning authorities which are in accordance with national and local planning policy and guidance.

Did you know?

The LLFA are not formally obliged to pass comment on non-major applications.

The following are ordinarily required as part of the planning approval process:

- **Flood risk assessments** review all sources of flood risk to the development site, and the likely impacts of the development upon risk, and make recommendations for how this risk can be managed.
- **Surface water drainage proposals:** detail how surface water will be managed during construction and after the development. This includes SuDS, which are designed to prevent increases in the amount and rate at which surface water leaves sites, either by infiltration to ground, or temporary storage.
- **Management and maintenance plans:** explain how SuDS and other drainage assets will be managed and maintained going forwards. The LLFA require a SuDS management and maintenance plan for all major developments.

National requirements are defined in the [National Planning Policy Framework](#) and [Planning Practice Guidance](#). Guidance on these, and the LLFA's local requirements are set out in the [LLFA Statutory Consultation Checklist and Planning and Development LLFA Guidance Note](#).



What we are doing

The LLFA will continue to fulfil its role as statutory consultee for surface water drainage matters on all major planning applications, in accordance with national and local policies and guidance.

The cumulative impact of multiple development sites upon catchments is considered and managed through the strategic flood risk assessments commissioned by district and borough council's, and development policies within the local plans (see [Local Planning Policy and Guidance sub-section](#)). Local communities can also review and comment on planning applications, highlighting local flood risk issues and other matters. The information provided can help shape development proposals.

Pre-application advice

It is widely accepted that the pre-application stage is the easiest time to work with developers, and influence site layouts. It is not a statutory duty for the LLFA to provide pre-application advice. There are often benefits to the provision of advice, but resources are limited. Other LLFAs have implemented chargeable advice, helping to resource the advice. This is being considered by the LLFA.



What we are doing

The LLFA will review all options for implementing a chargeable service for planning pre-application advice and other service delivery.

Case Study

Sustainable Drainage Systems - Everards Meadows

SuDS can help make commercial areas attractive places to work and visit. Everards Meadows, Blaby, includes a brewery and outdoor recreation space. The area around the brewery and access road incorporates above ground SuDS, including permeable paving, grassed paving and swales which all manage surface water runoff and provide biodiversity, water quality and amenity benefits. There is also a large area of open space, some of which provides compensatory flood storage so the risk of main river flooding from the River Soar is not increased. This is so the risk of main river flooding from the River Soar is not increased as a result of the development.



Management and maintenance

Post development, the long-term management and maintenance of SuDS and other drainage features is important to ensure continued benefits. The management of drainage systems is often split between one or more organisations. The most common scenarios are shown in the below table.

Sewers	Usually, Water and Sewerage Companies under section 104 of the Water Industry Act (1991)
Highway Drainage	Usually, Local Highway Authority under section 38 of the Highways Act (1980)
Sustainable Drainage Systems	Varies. Often private management & maintenance companies. The County Council as SuDS Approval Body if Schedule 3 is implemented (see next page)
Riparian areas	Varies. Often private management & maintenance companies, or those adopting adjacent greenspaces.

If you are concerned about the function of SuDS or drainage features within developments in your area, please contact your District or Borough Council.

Case Study

SuDS maintenance - Wigston

These photos show SuDS near Wigston shortly after they were constructed. It is important that they are maintained well to ensure they function as designed during heavy rainfall.



SuDS Approval Bodies

In January 2023, a [Government review](#) recommended implementation of Schedule 3 of the Flood and Water Management Act 2010. As written, Schedule 3 implementation would result in new national standards for SuDS, and the creation of SuDS Approval Bodies, responsible for:

- approvals; and
- operation and maintenance (if offered and approved for adoption) of SuDS.

At the time of publication of this Strategy (November 2023), implementation was expected in 2024, with the County Council as LLFA expected to become SuDS Approval Body for Leicestershire; a significant extension of the current statutory consultee role. The expected change has the potential to improve the design, construction, and management of SuDS in Leicestershire.



What we are doing

The LLFA and other RMAs will prepare for implementation of Schedule 3 of the Flood and Water Management Act 2010 and revise the Strategy Action Plan if implemented.

Case Study

Sustainable Drainage Systems – Hathern

Daisy Bank is a development of 56 houses on greenfield land at the North-Western edge of Hathern, Charnwood Borough. The on-site SuDS include a swale feature, crossed by a wooden bridge to a play area. This provides a good example of how SuDS features can be incorporated into attractive greenspaces.



Local Planning Policies and Guidance

Clear local policies, design standards and guidance help to ensure developments are built to the required standards. Statutory consultees and adopting organisations all provide such information for developers. It is important that such organisations/bodies work in a coordinated way. For example, the culverting of a watercourse under new public highway will require planning approval, land drainage consent and highways adoption approvals.



What we are doing

Risk management authorities and those involved in development approvals will continue to work together to ensure coordinated local standards and developer guidance, from pre application to completion.

In their role as Local Planning Authorities, district and borough councils must prepare [local development plans](#) (or local plans) which set out local planning policies for their administrative area, including allocations of land for development. The plans can include both general and site-specific flood risk management and drainage related policies. RMAs can assist with the development of these policies, and local communities can provide their input during consultations. The following documents are also of importance:

- **Infrastructure development plans** detail the strategic infrastructure required to deliver the growth planned within a local development plan.
- [Strategic flood risk assessments](#) help consider flood risk when making planning decisions about the design and location of any development; they often inform the development of local plans.
- [Neighbourhood plans](#) give communities the opportunity to help shape the development and growth in their local area. The plans are often linked to parish council's and can include consideration of local flood risk issues.



What we are doing

RMAs will support the development and review of local planning policy affecting local flood risk management. This includes local development plans, infrastructure development plans, strategic flood risk assessments, and neighbourhood plans.

Principles

Examples of how the Strategy principles are met through the Encouraging Sustainable Development Objective:

1

Working in partnership

- Partners work together to ensure coordinated local standards and developer guidance, from pre application to completion.
- The LLFA and others engage in the development of local planning policy.
- Planning responses are coordinated where necessary.

2

Working with communities

- Advice is provided on how to engage in the planning process on flood risk matters. Any local information provided can be used to inform planning responses. Guidance on how SuDS work is also provided.
- Planning documents including consultation responses are available on the planning portal.

3

Delivering multiple benefits

- Flood resilient homes, and avoiding development in the wrong places, can reduce the risk of flooding to new homes and businesses, and the associated negative economic, social, and environmental impacts.
- Local planning policy and guidance supports SuDS which deliver water quality control, biodiversity benefits, and carbon sequestration, also helping to achieve biodiversity net gain targets.
- Local policy also supports the protection of existing habitats and biodiversity, such as open watercourses and their floodplains. Betterment (e.g., through deculverting) is also sought where possible.

4

Adapting to climate change

- Future risk is considered in local planning policy and all application reviews through use of [climate change allowances](#).
- Resilient construction is supported, and statutory in some cases (e.g., raised finished floor levels).

5

Taking a risk-based approach

- Additional resource and expertise are directed towards higher risk or complex planning consultations.
- Necessary evidence is requested from applicants to make sustainable risk-based planning recommendations.
- Developer requirements are clearly stated, and the requirements are applied equitably (e.g., LLFA checklists).
- Local planning policy is also supported by evidence (e.g., through Strategic Flood Risk Assessments).

Objective 3:



Flood Preparedness, Response and Recovery

To manage local flood risk through effective preparedness, response to, and recovery from flood events.

There is much that can be done to reduce the risk of flooding occurring, however it cannot always be avoided, especially with climate change increasing flood risk. Therefore, working in partnership and with local communities, we need to be prepared for flooding when it does occur so we can respond and recover well.



Case Study

2019-20 Countywide Local Flooding

- From June 2019 to March 2020, Leicestershire received significantly higher than average rainfall. Rural catchments became saturated, increasing the impacts of rainfall running off the land and therefore the risk of flooding. Local drainage infrastructure was unable to cope with the sheer volume of water.
- Flooding occurred in the Autumn/Winter (e.g., Cossington and Stoney Stanton) and also the Spring (e.g. Appleby Magna). In total over 150 homes were flooded across Leicestershire.



Main Street Cossington, 1st October 2019



Appleby Magna, 17th February 2020

- Reported flooding was investigated and four formal flood investigations were published.
- 48 affected properties in Charnwood and North West Leicestershire benefitted from £5000 Government Property Flood Resilience grants, and local projects are being considered in various locations that flooded.
- The County Council also conducted a detailed review of flooding, making 25 recommendations, all of which have been considered in this Strategy.

Who is involved?

Various organisations have a role to play in being prepared, in responding and in recovering from flooding. The main organisations and their roles are briefly shown in the table below. With so many organisations potentially involved, arrangements for partnership working are essential.

LLR Prepared (the Resilience Forum)



- Coordination of both Multi-Agency Flood Plan enactment and tactical response for Leicestershire, Leicester & Rutland

Emergency Services



- Important role during response
- Police (response and recovery) Fire (rescue) and Ambulance (emergency healthcare assistance)

The Met Office



- Issuing severe weather warnings, and providing local weather advisories in partnership meetings

Environment Agency



- Flood forecasting and issuing of flood warnings
- Flood defence asset operation (main river)
- Coordination role for regional flood events

Leicestershire County Council



- Local Highway Authority role - reactive arm during events protecting highway network, or protecting properties from highway flooding
- Provision of flood risk information
- Assisting recovery and formal flood investigations

District and Borough Council's



- Assisting vulnerable individuals and establishing rest centres
- Local flood recovery

Water and Sewerage Companies



- Maintenance of essential assets and services (e.g., sewerage pumping stations, water treatment works), and sewers if blockages
- Maintain clean water supply or provide alternative supply

Transport network operators



- E.g., National Highways, Network Rail (closures if necessary)
- Arrangement of alternative transport routes if possible

Local communities (including flood wardens)



- Preparing and enacting community response plans
- Recording evidence of flooding when safe to do so

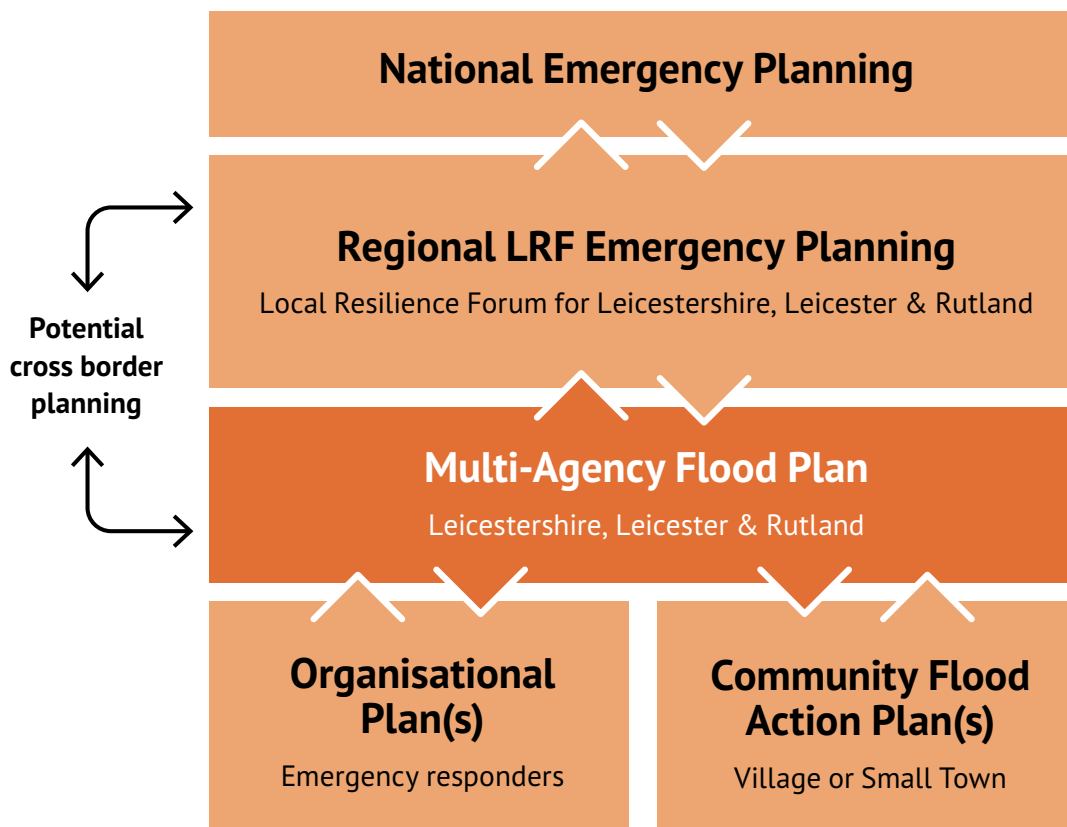
Voluntary sector



- A variety of roles including advice (e.g., National Flood Forum) and welfare (e.g., British Red Cross)

Flood plans

Flood plans are important for enabling incident management organisations to understand their roles and responsibilities, and work in partnership effectively. The Multi-Agency Flood Plan for Leicestershire, Leicester & Rutland is key, providing full details of flood event response roles and responsibilities. The diagram below shows how the Multi-Agency Flood Plan links with other plans.



How the Multi-Agency Flood Plan links to other emergency response plans



What we are doing

LLR Prepared will continue to maintain the Multi-Agency Flood Plan for Leicestershire, Leicester City and Rutland.

Communities can also be prepared for flooding by preparing community flood action plans (part of [community response plans](#)), often linked to flood action groups and Parish Councils. LLR Prepared and risk management authorities (RMAs) can assist in the development of these plans.



What we are doing

LLR Prepared, and risk management authorities will continue to assist local communities in producing and maintaining Community Flood Action Plans.

Preparedness

Flood Exercises

Flood exercises of varying scale are important for testing flood plans, training officers, and preparing communities. Cross-border, river basin wide and national exercises can allow for the testing of multiple plans (see Flood Ex22 case study below). More locally, exercises can be used to test community response plans, including the deployment of property flood resilience measures. The effectiveness of plans and procedures can then be reviewed and updated as required.



What we are doing

LLR Prepared and risk management authorities will continue to plan and support flood exercises as and when required and resources allow, implementing lessons learnt.

Case Study

Flood Exercises - FloodEx 22

- Flood Ex22 brought together multiple agencies to exercise a multi-agency response to widespread flooding across Leicester, Leicestershire, and Rutland.
- To test multi-agency and internal incident response plans, the exercise simulated a significant flooding event across multiple days.
- Multi-agency coordinating groups were required to respond to several scenarios. Some of these required evacuation and shelter arrangements being activated, joint messaging being produced, and water rescues in some cases.
- The exercise was part of a wider national exercise, which also provided the opportunity to exercise mechanisms for mutual aid and reporting into Central Government.
- In total 96 individuals attended from 26 local and national organisations.

Warning and informing

Flood forecasting, and the communication of flood forecasts can provide valuable time to prepare for possible flooding. The Environment Agency provide a flood warning service to most communities at significant risk to flooding from main river, and further communities at high risk will be provided a service by 2024. Homes and businesses can [sign up for flood warnings](#), and are encouraged to do so by RMAs.



What we are doing

Risk Management Authorities will continue to promote the Environment Agency's flood warning service where it is available in Leicestershire.

The Environment Agency's flood warning service does not cover all communities at risk of flooding, particularly those at risk from local sources, such as surface water or smaller watercourses. Through better understanding flood risk, RMAs work to identify communities that would benefit from local warning systems (e.g., see Breedon case study below). This is subject to funding arrangements for installation, and ongoing management and maintenance. Local warning systems are particularly effective in supporting the deployment of property flood resilience (PFR) measures such as flood barriers.

Case Study

Local Flood Warning System – Breedon

- Breedon-on-the Hill is mainly at risk from ordinary watercourse and surface water flooding.
- Following flooding in 2016 (formal flood report), a flow gauge was installed to (1) check modelling outputs (2) provide a local warning system.
- The maintenance of the system is managed by Breedon Parish Council.
- Now, as the watercourse level rises, text messages are sent to the local community.
- The system has been successful in warning the local community of further flood events.



Photo: Local Flood Warning System in Breedon

Community preparedness and local community initiatives

It is important that homeowners, communities and businesses understand their flood risk, and their responsibility to prepare for potential flooding. The gov.uk [Check the long term flood risk for an area in England](#) webpage provides an opportunity to do so based upon national flood risk mapping. The County Council as Lead Local Flood Authority (LLFA) can also be contacted to discuss flood risk from local sources.

There are various other actions which homes, communities and business can take to enhance preparedness and reduce the impacts of flooding. RMAs and emergency responders are not always able to provide advice and support before, during or immediately after a flood event as resources can be stretched across affected communities.

The flood risk management section of the County Councils website is designed to be an easy-to-use information source, supporting local communities and businesses in Leicestershire to be flood ready. For example, there is either guidance or signposts to guidance on:

- appropriate Insurance
- home or business flood plans
- property flood resilience
- community flood action plans (see flood plans section), and
- flood wardens.

Such measures can help communities respond (e.g., deploying flood barriers) and recover (e.g., being ready to make an insurance claim) from flooding quicker.



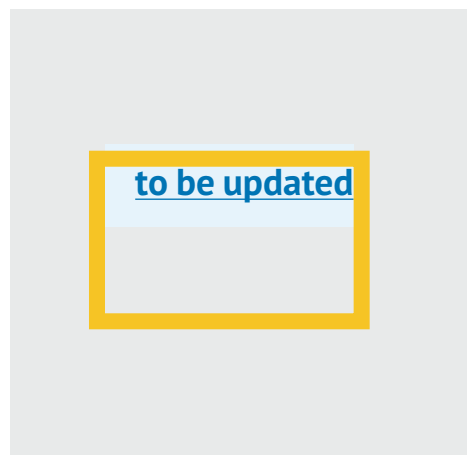
What we are doing

Risk management authorities will work together to develop initiatives and web-based information to enhance community preparedness and resilience to flooding.

Case Study

Flood Wardens

- Flood Wardens are members of local communities at risk from flooding who assist with flood preparedness, response and recovery, and other matters such as monitoring the condition of assets, better understanding risk, and project delivery.



Possible case study of Sileby?
Photo to be updated.

Response

The Leicestershire Leicester & Rutland Multi-Agency Flood Plan clearly defines response roles. Communication is essential for direction of resources to those that need it most. Initially, the County Council and/or Leicestershire Police are likely to lead and co-ordinate the response to a flooding incident. If large scale evacuations are required, it may be more appropriate for Leicestershire Police or Leicestershire Fire and Rescue Service to become the lead agency.

Business continuity and risk management

Individual agencies and organisations are responsible for ensuring that they have robust business continuity plans in place. This is so that during the response to a major incident, they can continue to provide statutory services. This includes processes for depleted resources and concurrent incidents. It is also important for agencies and organisations to have risk management processes in place to manage the safety of those involved in response.



Photo: Evacuation by Fire and Rescue Service in Breedon, 2016

Recovery

Effective recovery from flood events aims to assist those communities which have been affected, and repair assets and infrastructure. A Recovery Coordinating Group can be set up through the Multi-Agency Flood Plan to manage organisational resources efficiently. RMAs also seek to promote national schemes, such as the [Build Back Better](#). The scheme is designed to reduce the cost and impact of floods, by including new or improved property resilience measures as a part of the insurance claim process.



What we are doing

Risk Management Authorities will continue to support national recovery schemes following flood events.

Review and investigations

Section 19 of the Flood and Water Management Act 2010 requires the County Council as LLFA to complete formal flood investigations. The [Leicestershire Formal Flood Investigations Policy](#) details the criteria which may lead to a formal flood investigation. The LLFA must publish the results of its investigation and notify any relevant RMAs. Between 2014 and 2022, the LLFA published 35 formal flood investigations, all of which are available to view on the [County Council's website](#).



What we are doing

The LLFA will continue to complete and publish formal flood investigations in accordance with Leicestershire's Formal Flood Investigations Policy.

Other investigations

Not all flood events meet the criteria for a formal flood investigation, however this does not mean they are not investigated; all flooding from local sources is investigated. A risk-based approach is taken to prioritising flood investigations.

Investigations seek information from a wide variety of sources, for example: issuing flood surveys to residents and businesses; desk top data reviews; and asset condition inspections. RMAs meet at Flood Enquiries Partnership meetings to discuss investigations and agree responsibilities, such as which RMA will lead on community communications.

Did you know?

Leicestershire County Council receives hundreds of enquiries relating to drainage and flooding, but most of these do not trigger the local threshold for formal investigation.

Principles

Examples of how the Strategy principles are followed through the Flood Preparedness, Response and Recovery Objective:

1

Working in partnership

- Roles and responsibilities, and methods of communication are detailed in flood plans, which are agreed, revised, and updated in partnership.

2

Working with communities

- Partners support community initiatives to improve community resilience, helping communities to reduce flooding impacts.
- During recovery and investigation, information is gathered from local communities, including their views on how risk of reoccurrence could be reduced in the future.
- Communities can be kept up to date with flood investigation progress, and formal flood investigations are available online.

3

Delivering multiple benefits

- Preparedness can significantly reduce the socio-economic and environmental impacts of flooding to homes and businesses.
- Alternatives to temporary measures such as sandbags are promoted, as sandbags can only be used once before disposal is required.
- The safe disposal of waste from flooded properties is considered as part of the recovery phase.

4

Adapting to climate change

- The potential for more frequent and severe flooding due to climate change is being communicated amongst stakeholders.
- Organisations are preparing for more severe events more often, including the possibility of wetter winters. For example, flood plans were reviewed following the wet winter of 2019-20 flooding (see case study).

5

Taking a risk-based approach

- Preparedness measures such as local warnings are informed by local weather forecasting and river level information.
- Flood plans promote the effective coordination of organisational and community resources, so highest risk issues are prioritised.
- The Formal Flood Investigation Policy directs investigative resources towards communities where they are needed most.

Objective 4:



Better Understanding Flood Risk

To better understand local flood risk and impacts, informing approaches to managing this risk.

It is important to improve understanding of flood risk. This particularly assists in taking a risk-based approach, so limited resources can be targeted to those who need them most. It helps to inform management approaches and future bids for funding to help tackle current and future flood risk. As mentioned previously, all risk management authorities (RMAs) must work together to effectively understand and manage flood risk, and where appropriate identify joint solutions.



Case Study

Local Study – Stoney Stanton

- Over 30 homes, a commercial property and a school were flooded in October 2019.
- A [formal flood investigation](#) followed, which recommended further study work, including flood modelling, which was commissioned and funded by national flood funding.
- The investigation and modelling study were informed through a variety of sources, including CCTV investigations, and valuable photos and videos from the local community.
- Through using the model and obtaining better information, options have been assessed for reducing flood risk, and the potential impacts of climate change.
- Work is ongoing to determine whether a local project will be viable for the community.



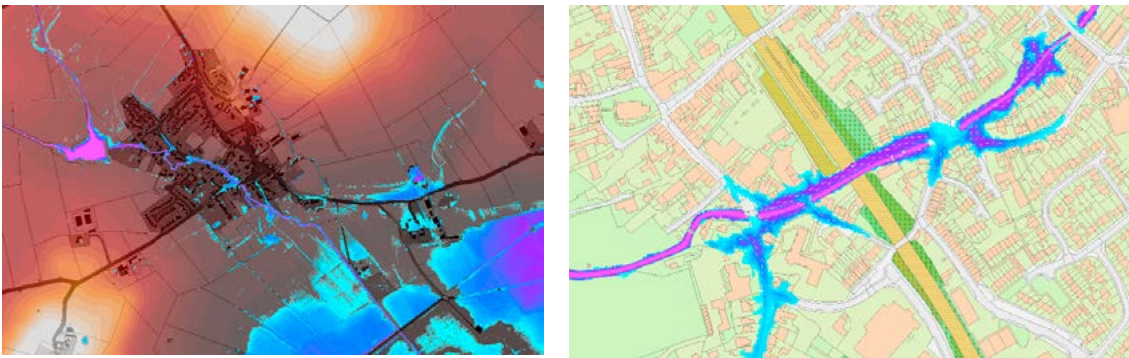
Photos: outfall (left) and CCTV survey (right)

How do we better understand risk?

Information is used from a variety of sources and shared between organisations where necessary. Some key types of sources are shown on the next page. RMAs aim to be resource efficient, by only collecting new data where required, and ensuring it is created and stored in ways which it can be used again.

Modelling

Computer modelling is often required to better understand the complexities of flooding, particularly for infrequent events, and to assess the effects of climate change. It is important to remember models are always a simplification of reality, which are most reliable when informed by good data and local knowledge.



Examples of computer flood risk modelling in Leicestershire

The County Council as Lead Local Flood Authority (LLFA) has been managing the production of detailed surface water flood modelling for the county. The modelling provides alternative uses to nationally available surface water flood modelling, such as the ability to test the impact of a range of rainfall events. The modelling will help to inform a range of flood risk management activities including the Assessment of Local Flood Risk which supports the Strategy.



What we are doing

The LLFA will manage the production and maintenance of detailed surface water modelling for Leicestershire.

Other examples of how we better understand flood risk

Reviewing historic events

Past flood events provide a valuable insight into how flooding may occur in the future. Information sources include weather and river level data, and the valuable information provided by local communities (e.g., photos, videos, descriptions). The LLFA also maintain records of local flood risk events.



Photo: Flooding in Appleby Magna

Desk based information

A variety of desk-based information is used, such as mapping, street view, modelling outputs and existing surveys. These are shared between organisations when necessary, and often help inform further site-based data collection.



Site walkovers

Site walkovers are used to gather information not available at the desk or checking that desk-based information is accurate (e.g., locating and inspecting assets). Site walkovers are often done in collaboration with local communities or responders who witnessed previous flood events.



Photo: Watercourse at Stoney Stanton

Site Surveys

Potential site surveys include:

- **CCTV** - to survey the condition of pipes or culverts.
- **Property** - to review potential routes of water ingress, and the measures required for protection.
- **Topographical** - to survey watercourses and land to inform computer modelling



Photo: CCTV survey at Stoney Stanton

Studies for better information

Details of current and planned studies, including locations and timescales, are available in the Action Plan or on the website.

Local studies

Local studies are focused on a particular community, such as a village or town. They are often where there has been flooding and investigations have followed, but questions remain as to the causes, and what could be done to potentially alleviate risk. Local studies are used to provide information towards the development of local projects, though not every study will ultimately lead to a project. For example, the study may identify potential measures which are too costly to be funded.

Surface water management plans

Surface water management plans are a framework to help understand the causes of surface water flooding, and agree preferred strategies for the management of risk. They are usually focused on larger towns or cities. Surface water management plans have so far been developed in Loughborough and Market Harborough. The LLFA and Severn Trent have also been working closely to better understand surface water flood risk in Hinkley and Burbage.

Case Study

Market Harborough Surface Water Management Plan

- There is a long history of surface water flooding in Market Harborough, including a major event on 27th July 2013 ([formal flood report](#))
- In 2018, a partnership of risk management organisations was formed and agreed to develop a surface water management plan for the town.
- Specialist consultants carried out modelling and economic analysis of flood damages, identifying 15 hotspots for further investigation.
- In 2022, two working groups were formed to identify and develop measures for alleviating risk and improving resilience.
- Work continues to identify further flood mitigation options for the local community.

Principles

Examples of how the five Strategy principles are followed through the Better Understanding Flood Risk Objective:

1

Working in partnership

- Information is shared between organisations where possible, such as flood records, asset information and modelling outputs.
- RMAs regularly meet to discuss issues with multiple sources of risk.
- Studies can provide better understanding of how local flood risk interacts with other sources of risk, such as fluvial flood risk from larger rivers.

2

Working with communities

- Partners help communities to better understand their flood risk, through web based information and other support.
- Study outcomes can be shared so communities better understand their risk and can be better prepared.
- Local knowledge is sought after and valued when assessing risk.
- Community members will where possible have equal opportunity to be involved and engaged in studies.

3

Delivering multiple benefits

- Flood risk studies may also involve environmental assessments, to better understand status, and how improvements may be achieved.
- Studies are desk based where possible to reduce travel carbon.
- Better understanding flood risk may lead to local projects which deliver social and economic benefits.

4

Adapting to climate change

- Future risk can be assessed by modelling climate change scenarios.
- Studies can provide information to support resilience measures, such as property flood resilience schemes.

5

Taking a risk-based approach

- Studies are prioritised using a risk-based approach, usually in areas where there is a high risk of flooding, but a better understanding is required.
- Evidence is collected from a broad range of sources and evaluated in the most appropriate way.

Objective 5:



Local Projects

To manage local flood risk through developing and or managing local projects for at-risk communities.

Current projects and progress can be viewed on the website and are listed in the Action Plan.



Local projects for flood alleviation measures can result in better protection against future flooding for a community. For any project, a variety of flood alleviation measures may be possible. For example, a project may include property flood resilience (PFR) and natural flood management (NFM). Detailed analysis of available data is required to identify the most effective measure or combination of measures to be implemented.

Local projects are focused on communities which have flooded before or are identified to be at risk. Homes, businesses, and infrastructure can all benefit from a local project. There may also be a range of other benefits provided through a project, including economic, environmental, and social outcomes.

Case Study

Local Project - Swithland Property Flood Resilience Scheme

The village of Swithland has flooded on multiple occasions. A study was commissioned by the County Council as Lead Local Flood Authority (LLFA) to better understand flood risk and consider options. It was found that the only cost-effective and technically viable option was PFR (e.g., flood barriers and doors), combined with a local flood warning system. Funded through a mixture of national flood funding (Grant in Aid), local levy, and LLFA contributions, PFR was installed to 22 homes including 15 Grade II listed buildings.



Photo: flood barrier covering two doors, Swithland

Who is involved and how?

Whilst projects form an important part of the Strategy, it is important to note that other statutory responsibilities may take precedence over project development and delivery.

Lead Local Flood Authority (County Council)



- Although the LLFA have no statutory responsibility to deliver projects, there is a developing programme of projects for Leicestershire on the National Flood Risk Management Programme.
- Develop and bid for funding from a range of different sources
- Attend the Regional Flood and Coastal Committee meetings and report regularly on progress to the Environment Agency on any projects on the National Flood Risk Management Programme

Local Highway Authority (County Council)



- The approval and potential delivery of highway drainage improvement that links to local projects

Environment Agency



- Responsible for managing the National Flood Risk Management Programme.
- Provide advice and guidance on project delivery
- Lead delivery of main river projects, with potential local flood risk benefits

Regional Flood and Coastal Committees



- Promote targeted and risk-based investment in flood and coastal erosion risk management that optimises value for money and benefits for local communities
- General oversight of regional projects on the National Flood Risk Management Programme
- Responsible for the distribution of local levy funding to projects.

Water and Sewerage Companies



- Manage sewer infrastructure schemes with potential local flood risk benefits
- Potential source of partnership funding for projects which benefit the sewer network

Local Communities



- Potential involvement in project development and delivery
- Subject to their agreement, landowners or homeowners may become responsible for maintaining measures

Charities, businesses, and local organisations



- Can be involved in local projects bringing added value, funding, and various other benefits

Consultants



- Become involved in local projects where specialist skills are required, such as for surveys, economic analysis, or flood risk modelling

Contractors



- Construction or installation of measures
- Locally based contractors are used where possible

Typical Measures for Local Projects in Leicestershire

Natural Flood Management (NFM)

Using or mimicking natural processes within a catchment, to reduce flood risk downstream. For example, leaky dams, floodplain reconnection, and altering farming practices. NFM can also have significant environmental benefits.



Photo: Leaky dam upstream of Breedon

Watercourse asset improvements

In channel improvements to reduce the risk of watercourse flooding. This can include replacing or upgrading assets of poor condition or design, such as culverts and screens.



Photo: Footbridge to be removed at Breedon to increase channel capacity.

Property Flood Resilience (PFR)

Measures installed to properties, such as flood barriers or doors. PFR is often used where there is no other feasible cost-effective way of alleviating risk to a property. PFR can be in the form of resistance (resisting water entering the property) or resilience measures (minimising the impact of internal flooding).



Photo: Automatically closing airbrick, Swithland

Sustainable Drainage Systems (SuDS)

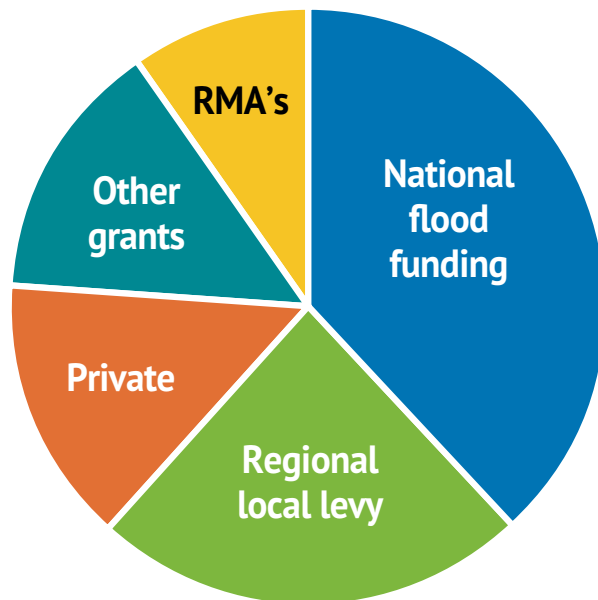
SuDS can have significant, water quality, biodiversity, and amenity benefits as well as helping to mitigate local flood risk.



Photo: SuDS at Measham Leisure Centre

How are local projects in Leicestershire funded?

Local projects can be funded through a combination of sources, of which the following are most likely (proportions are indicative only).



National Flood Funding is available to risk management authorities. Detailed businesses cases are required to secure the funding and projects must demonstrate a good cost benefit and a partnership approach.

Regional local levy is raised by a levy on local authorities based on band D properties in the areas. It is distributed by RFCC's according to local priorities.

Private contributions can be secured from businesses, developments or even beneficiary homeowners, particularly where they are set to benefit from schemes.

Others grants include special grants to help protect schools, or funding for innovative projects. They may have an alternative primary focus, such as environment or heritage, but also deliver flood risk management benefits.

Risk Management Authorities (RMAs) The limited capital resources of RMAs or other partner organisations may occasionally be used to support schemes. For example, the staff time taken to develop and manage schemes is often recorded as a contribution.

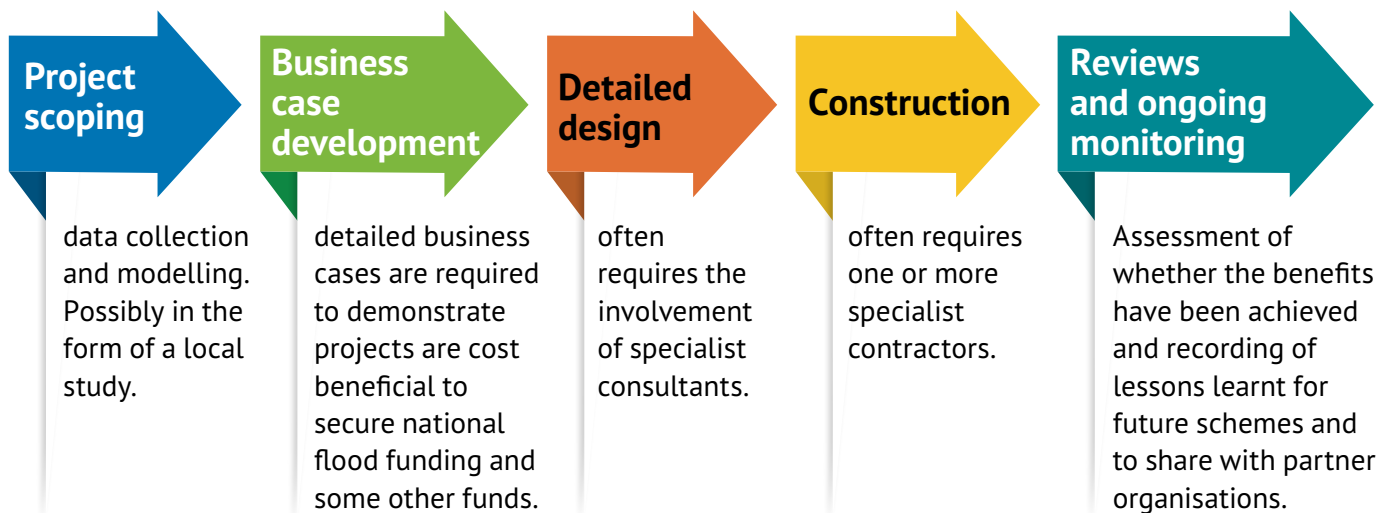
How are local projects delivered?

Project delivery can be a complex and resource intensive process that can take many years. There is also no guarantee that a project will move from scoping all the way to construction. A project can end at any point if it becomes unviable such as the cost becomes so high that it outweighs the benefits of implementing it.

Did you know?

The LLFA report monthly to the Environment Agency on project progress as well their own internal reporting functions.

The following steps are usually required in the lifecycle of a local project:



Timescale – years



What we are doing

Risk management authorities will monitor the benefits of completed flood risk management schemes.

How are local projects prioritised?

The main factor by which projects are prioritised is the level of local flood risk. Communities identified in the Assessment of Local Flood Risk as being at higher risk are likely to be prioritised. There are other factors which may affect prioritisations, such as

- funding opportunities
- technical feasibility
- opportunities to address other sources of flood risk in partnership
- community vulnerability
- cost benefit analysis, including the delivery of other benefits (e.g., environmental), and
- flooding over recent years.

The County Council as LLFA maintain a pipeline of local projects for potential scoping and development, which is subject to resource availability.



What we are doing

The LLFA will continue to maintain a pipeline of local projects.

Case Study

Local Project - Breedon Flood Alleviation Scheme

A major flood event in 2016 caused flooding to over 20 properties in Breedon ([formal flood report](#)),

- A local study (which incorporated detailed flood modelling) led to the development of a successful business case for national flood funding and local levy funding.
- The local project is delivering a combination of measures designed to reduce risk, including:
 1. NFM in the upstream catchment
 2. Removal of an inefficient asset (historical twin arch culvert)
 3. Upgrades to a SuDS scheme on a new development site
 4. PFR to a handful of properties



2016 Flooding



NFM installed upstream of Breedon

Principles

Examples of how the Strategy principles are followed through the Local Projects Objective:

1

Working in partnership

- Projects often involve managing multiple sources of flood risk. Partnership working between the relevant RMAs helps to achieve this.
- Partnership working can also help to identify and secure a wider range of funding sources.

2

Working with communities

- Partners aim to provide regular project updates to affected communities in agreed forms of communication.
- Measures such as NFM, or PFR will require collaboration and agreement from property owners or landowners.
- Communities may also be involved in post project monitoring to check measures are working as planned.

3

Delivering multiple benefits

- Multiple benefits are delivered as a part of projects where possible. Such benefits can be estimated and form part of cost-benefit analysis within business cases, to help secure funding.
- The whole life carbon of projects is calculated at an early stage, and assessments refined as projects develop. Lower carbon options are preferred where possible.

4

Adapting to climate change

- Future risk is considered in all projects, for example through modelling.
- National flood funding is also available to help protect properties which are at risk in the future.
- Projects measures will be designed to increase resilience to the changing climate, either by alleviating risk, or improving resilience.

5

Taking a risk-based approach

- The Assessment of Local Flood Risk is used to help prioritise which locations are scoped for local projects.
- For each project, existing 'baseline' risk is thoroughly assessed before possible mitigation measures are appraised.

Creation, Consultation, Monitoring and Review



Why was the Strategy updated?

The following lists the six key reasons for a full Strategy update which were presented to the Leicestershire Flood Risk Management Board.

1. Review timescales

- The former Strategy was published in August 2015. It stated that it was to be updated every 6 years, therefore an update was due.
- This aligned well with updates to regional [Flood Risk and River Basin Management Plans](#) (as intended), published in December 2022.

2. National Strategy Consistency

- The Strategy must be consistent with the National Strategy.
- A full update to the National Strategy was published on 14th July 2020. Updates were required to ensure consistency.

3. By recommendation of scrutiny

- Following significant flooding in Autumn 2019, a panel of County Council members reviewed flood risk management arrangements.
- The panel [published their findings in 2021](#), supporting a Strategy refresh.

4. Improved understanding and Strategy utility

- Risk Management Authorities (RMAs) have an improved knowledge of local flood risk in Leicestershire, and how it is to be managed.
- This updated Strategy reflects this, better defining what is being done (objectives and measures), and the way in which it is approached (principles).

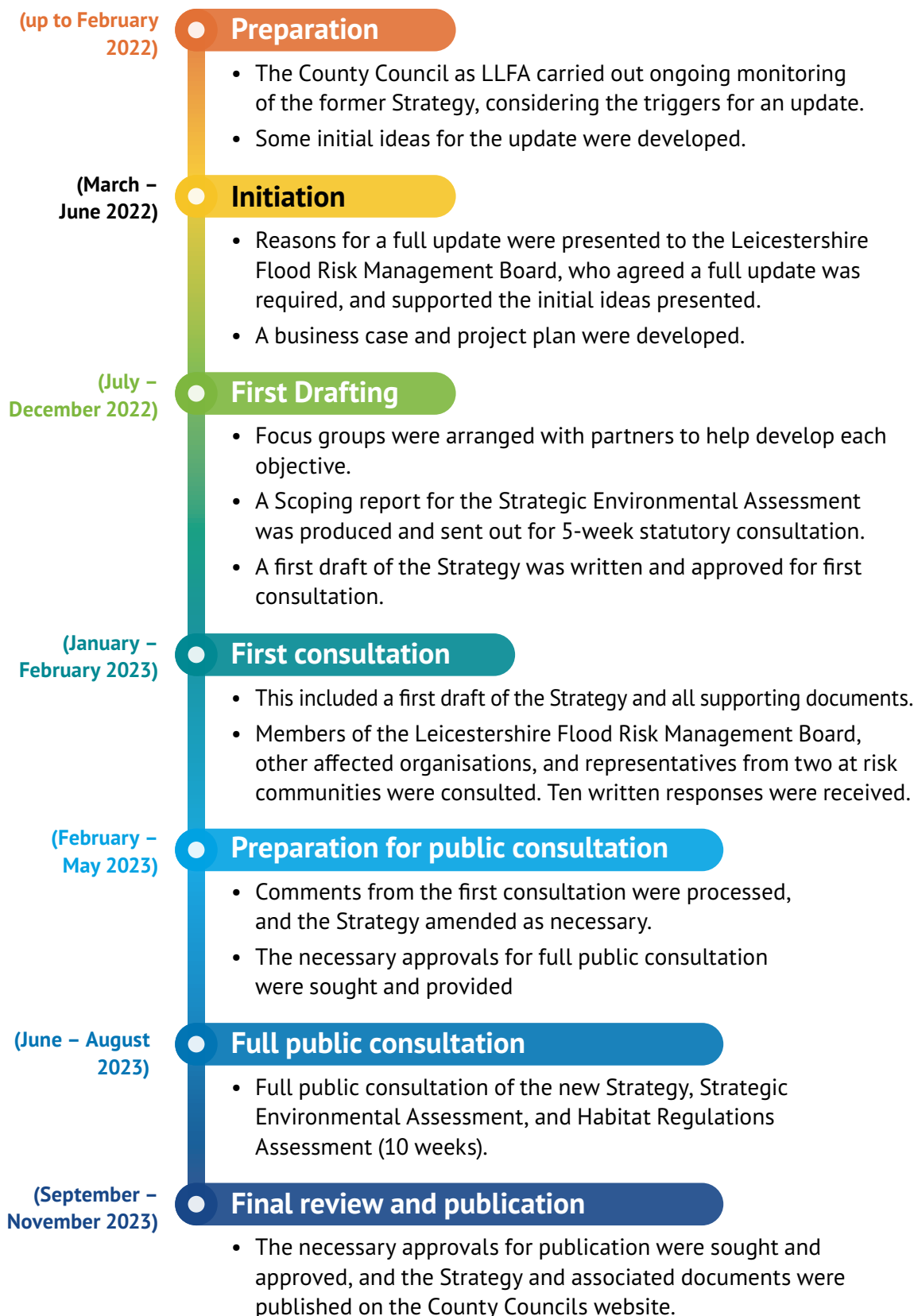
5. Community engagement

- Review of the former Strategy suggested it could be more useful as a community engagement tool, both in terms of content and format, whilst also achieving other requirements.

6. Changes to policies and approaches

- Upon review of the former Strategy, some ways of working had already changed. Other changes were proposed and approved, such as changes to the thresholds for formal flood investigations.

How was the Strategy updated?



Monitoring and Review

The County Council as LLFA are required to maintain and monitor the Strategy.

- **Annual maintenance** will be carried out to check documents are functional and accurate. This will include checking and amending links, and minor amendments to text and supporting documents. Please contact the LLFA if you identify any such issues.
- **Action plan progress** will be monitored, with updates provided to the Leicestershire Flood Risk Management Board. New measures may be added as they are identified, or removed when completed.
- **Supporting documents** such as the Assessment of Local Flood Risk will be reviewed regularly. Minor changes will be reported to the relevant organisations and detailed on the Council's website. The process for consulting on more significant changes will be discussed with the Flood Risk Management Board and senior officers.
- The Strategic Environmental Assessment Regulations require the monitoring of significant environmental effects of the implementation of the Strategy. Further details are provided within the monitoring section of the **Strategic Environmental Assessment**. The environmental effects of measures will be monitored alongside the Action Plan.
- An internal **Equality and Human Rights Impact Assessment** will also be monitored.



Scrutiny

The County Council is a public body subject to public scrutiny. This will be conducted through the [Highways and Transport Overview and Scrutiny Committee](#). The Committee will act as the County Council's 'Flood Risk Management Committee' and monitor the performance and activities of the Leicestershire Flood Risk Management Board, in accordance with Section 9FH of Schedule 2 of the Localism Act 2011.

Full review and update

It is not anticipated that another full review and update of the Strategy will be required for several years. Any significant triggers such as changes in policy will be reported to the Flood Risk Management Board, and a decision made as to whether this Strategy requires a partial or full review and update.

BE FLOOD READY - LOGO TBC

www.leicestershire.gov.uk/flooding

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