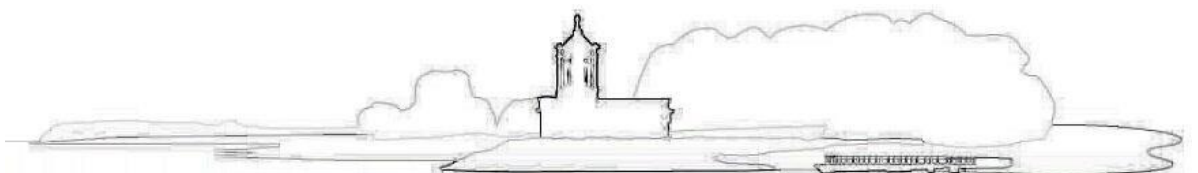


Rutland County Council

LOCAL FLOOD RISK MANAGEMENT STRATEGY

Version & Policy Number	1
Guardian	Dave Brown, Director for Places (Environment, Planning & Transport)
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Summary of document

This strategy will provide an overview for how the Council as the Lead Local Flood Authority (LLFA) will lead and co-ordinate local flood risk management in Rutland. It will act as the focal point for integrating all flood risk management functions in the County and has regard to the Environment Agency's National Flood and Coastal Erosion Risk Management Strategy.

The document provides a background to the need for such a strategy, detailing the local and national drivers whilst setting out where responsibility for different flood risks lay. The existing framework for managing and communicating flood risk is briefly described including how RCC are currently fulfilling their LLFA roles.

The uplands of Rutland provide headwaters for three separate catchments, these relatively steep clay uplands appear conducive to flash flooding but historically the mapped risk and actual experience of flooding is somewhat limited, even during recent heavy rainfall events and as such the level of flood risk has been deemed to be relatively low in both local and national assessments.

Two reservoirs dominate the landscape in the area and both are well managed and have a negligible flood risk being more significant for their wildlife designations and the amenity they provide to residents and visitors of the area.

Changes to national surface water flood mapping have identified a Flood Risk Area of national significance within Oakham, this was reported through the Preliminary Flood Risk Assessment and has been incorporated into the Action Plan within this Strategy. The Action Plan will be reviewed on an annual basis to ensure any newly identified risks can be targeted.

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1.0 INTRODUCTION

1.1 Why do we need this document?

Flooding is a natural process that plays an important part in shaping the environment. However, flooding can cause damage, disruption; and in extreme circumstances loss of life. Flood risk in England appears to be increasing. While it is not possible to prevent all flooding, understanding the risks means we can put plans in place to manage them and reduce the impact flooding may have on our communities.

Rutland County Council (RCC) is a lead local flood authority (LLFA) and is responsible for producing, maintaining, applying and monitoring a local flood risk management strategy (LFRMS) which is consistent with the national strategy.

This strategy will form the framework within which we engage local communities and other risk management authorities in developing local flood risk management decisions, and explain how we will support them to become better informed about flood risk issues generally.

In 2017 RCC were required to review its Preliminary Flood Risk Assessment (PFRA) against current flood risk data and information held by the Environment Agency. The assessment concluded that since the publication of the original report in 2011 there had been no nationally or locally significant flood events. It also reported that procedures are in place for RCC to carry out its duties as a Lead Local Flood Authority such as data collection and management and acting as a statutory consultee in the planning process.

The latest surface water flood risk mapping was assessed as a part of the PFRA and was found to highlight a new area of nationally significant flood risk in Oakham. This newly identified Flood Risk Area (FRA) creates a requirement on RCC as a LLFA to investigate that risk and if necessary identify a means of managing that risk. This report will describe how the risk was identified and include the next steps in addressing this risk as a part of an action plan.

1.2 The water environment in Rutland

The headwaters for three river basins originate in the higher ground to the north and west of the county. The water then sheds in three separate directions through a series of ordinary watercourses before reaching the main rivers downstream.

The predominant catchment is that of the River Welland which forms a part of the wider Anglian River Basin. Small areas in the north and west of the county provide sources the River Eye, which lies in the Severn Basin, and the River Witham, which lies in the Humber Basin.

This higher ground is typically formed of clay soils which means that a relatively high proportion of the water falling here will runoff into the watercourses and down to the rivers. The combination of clay soils and steep

slopes means that the water level in the watercourses can change quite rapidly during periods of heavy rain.

As the slopes become gentler in the east of the county the ground conditions start to change, the presence of limestone beneath the surface allows more opportunity for water to soak into the ground and also opportunity for water to spring from the ground.

1.2.1 River Welland catchment tributaries

Bisbrooke Brook originates from the highland around Uppingham and runs in an easterly direction to join the River Welland.

The **River Chater** runs from west to east, entering the RCC area near Launde Abbey and running east before it is joined by **Morcott Brook** between North and South Luffenham and continues in an easterly direction, passing through Ketton before joining the Welland.

The **River Gwash South Arm** runs from west to east through Braunston in Rutland and Brocke before feeding into Rutland Water reservoir. The **River Gwash North Arm** and **Barleythorpe Brook** both flow through Oakham from the rural area to the west and then combine downstream of Oakham before entering Rutland Water. Flows from Rutland Water feed the River Gwash to the east of the reservoir. **North Brook** runs from north to south through Cottesmore, Greetham flowing into the **River Gwash** at Empingham before flowing through Tickencote, Great Casterton and Ryhall on the way to its outfall into the River Welland downstream of Stamford.

Eye Brook has its head waters in Leicestershire and runs north to south on the western border from Belton in Rutland, passing through Eyebrook reservoir to Caldecott before entering the Welland.

To the east the **River West Glen** runs from north to south passing around Essendine before joining the Welland.

The **River Welland** runs west to east on the southern boundary of the authority area and eventually into the wash near Fosdyke Bridge.

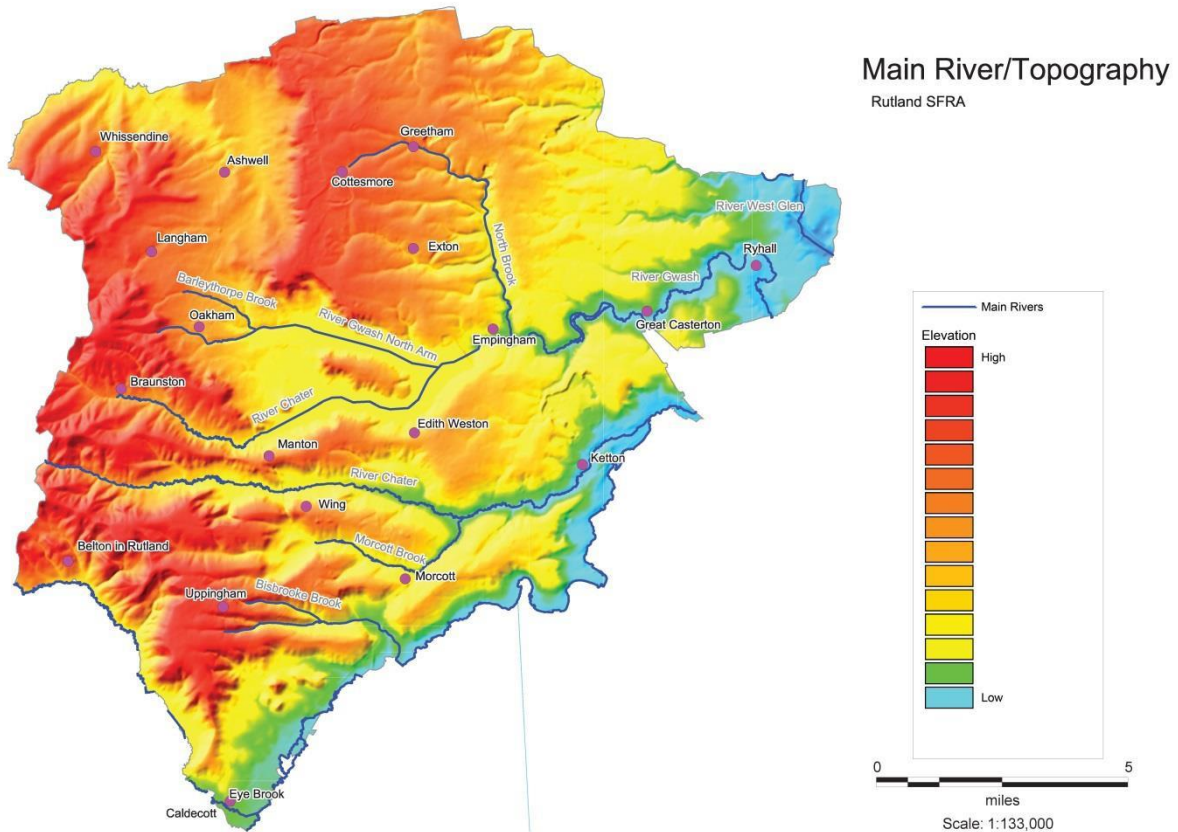
1.2.2 River Witham Catchment

A series of watercourses in the north of the RCC area, near Thistledon, drain across the border and eventually into the **River Witham** near South Witham. The River Witham then flows east to the wash.

1.2.3 River Eye Catchment

A second series of watercourses serves a number of settlements in the north-west including Whissendine, Langham and Ashwell. This then flows into the **River Eye** near Stapleford and in turn joins the River Wreake which is a tributary of the River Soar. The River Soar then joins the River Trent before passing into the River Humber and on to the North Sea.

Main River/ Topography map



1.2.4 Reservoirs

Rutland Water lies in the catchment of the River Welland and was created in the 1970s for public water supply and is recharged with flows from Barleythorpe Brook, River Gwash North Arm and River Gwash South Arm. The reservoir is also now a Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) for wildfowl and a Ramsar wetland conservation area.

Eyebrook Reservoir also lies in the River Welland Catchment and was constructed in the 1930s to supply water to Corby steel works but is now associated more as a fishery. This reservoir has also a SSSI.

1.2.5 Oakham canal

Oakham canal provided a link between Oakham and Melton Mowbray to transport goods, this was formally closed in the 1840s. Whilst connectivity between the two towns has been lost, some sections of the canal still hold water and have a value for amenity and wildlife.

1.2.6 Sewers

The public sewers in the Rutland area are operated by the Water and Sewerage Companies (WaSC) with Severn Trent managing the sewers that discharge into the Severn catchment and Anglian Water managing the sewers that discharge into the Witham and Welland river catchments.

2.0 LEGISLATION AND POLICY

2.1 National Context

2.1.1 Flood Risk Regulations

Flood risk regulations 2009 have been put in place to implement the **EU Flood Directive** (http://ec.europa.eu/environment/water/flood_risk/). These regulations required the production of a PFRA, which RCC published in 2011 and later reviewed in 2017. The regulations outline the roles and responsibilities of the various authorities consistent with the Flood and Water Management Act 2010 and provide for the delivery of the outputs required by the directive. The Regulations:

- Give responsibility to the EA to prepare Directive deliverables: preliminary assessment report, flood risk maps and hazard maps and flood risk management plans for flood risk from the sea, main rivers and reservoirs.
- Give responsibility to Lead Local Flood Authorities (LLFA) to do the same for 'local flood risk', which includes surface runoff, groundwater and ordinary watercourses.
- Give responsibility to the Environment Agency for collating and publishing the preliminary assessment reports, flood risk maps and hazard maps, and flood risk management plans.

More details relating to the PFRA can be found in section 2.2.1.

2.1.2 Flood and Water Management Act

The Flood and Water Management Act (FWMA) 2010 makes specific provision for the recommendations provided by Sir Michael Pitt in his independent review of the flooding experienced across much of England and Wales in 2007.

Under the FWMA, Rutland County Council is designated as a LLFA and has been allocated a number of key responsibilities with respect to local flood risk. <https://www.legislation.gov.uk/ukpga/2010/29/contents> The Council's role as an LLFA is to:

- Undertaking a lead responsibility for managing the risk of flooding from surface water, groundwater and ordinary watercourses;
- Developing a strategy for local flood risk management in Rutland;
- Maintaining a register of flood risk assets;
- Investigating significant flooding incidents;

- Cooperating with other flood risk management authorities (Anglian Water, Severn Trent, EA, Network Rail).

The Act defines Local Flood Risk as being surface runoff, groundwater and ordinary watercourses. For clarity ordinary watercourses are watercourses that are not classified as main rivers.

2.1.3 National Flood and Coastal Erosion Risk Management Strategy (FCERM)

It is important to appreciate where the LFRMS sits in the context of the national flood and coastal erosion risk management (FCERM) strategy. There are different flood risk strategies and policies that link to European, National and local level as follows:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228898/9780108510366.pdf

To fit with national strategy, local organisations such as RCC will need to do the following:

- Work in partnership to make sure plans and strategies are consistent with, and developed in conjunction with related strategies
- Appraise and adopt, as appropriate, the full range of measures that may be available to manage risks
- Consider the wider carbon costs or benefits of adopting different flood mitigation measures and reduce the carbon costs of the measures used
- Contribute to the achievement of sustainable development, balancing the needs of society, the economy and the urban, rural and natural environment
- Ensure that the costs of measures are clear and understood and that the measures selected reflect expected climate change
- Meet legal requirements to assess the impacts of strategies
- Record the measures being implemented and provide local information to support the EA in developing the national understanding of risk and to meet the requirements of the flood risk regulations

2.1.4 Water Framework Directive

This directive became UK law in December 2003 aiming for a good ecological and chemical status of all ground and surface water bodies in the European Union. The country is divided into a series of River Basin Districts with each having its own River Basin Management Plan to manage the delivery of this directive. http://ec.europa.eu/environment/water/water-framework/index_en.html

More detail on the three River Basin Management Plans that cover Rutland can be found in section 2.2.3.

2.1.5 Reservoirs Act 1975

This act regulates the management of all reservoirs holding more than 25,000 m³, requiring those reservoirs to be registered with the Environment Agency and have appropriate flood plans and maps in place. In Rutland this includes the reservoirs of Eye Brook and Rutland Water.

<http://www.legislation.gov.uk/ukpga/1975/23>

2.1.6 Civil Contingencies Act 2004

This places an obligation on certain authorities to prepare for and respond to emergencies such as flooding. RCC are a member of the Leicester, Leicestershire and Rutland Local Resilience Forum (LRF) and classified as a category one responder. This means they are required to have plans in place which enable them to control and respond to emergency events, reducing their impacts managing the subsequent recovery.

<http://www.legislation.gov.uk/ukpga/2004/36/contents>

2.1.7 Land Drainage Act 1991

This places duties on owners of watercourses to keep watercourses in a condition that allows the water flow to flow freely and not be impeded.

The Land Drainage Act also provides Rutland County Council with powers to regulate ordinary watercourses to ensure that flows can be maintained to provide adequate land drainage and not increase flood risk, this includes;

- issuing consents on alterations to ordinary watercourses such as construction of culverts for site access,
- obligations of enforcement on other parties to reinstate, repair or carry out maintenance on watercourses to maintain the flow of water,
- permissive powers to carry out works on ordinary watercourses

<http://www.legislation.gov.uk/ukpga/1991/59/contents>

2.1.8 Planning requirements for new developments

The **National Planning Policy Framework** (NPPF) sets the national policy for new developments and includes guidance on Flood Risk and Coastal Change (<https://www.gov.uk/government/publications/national-planning-policy-framework--2>). These policies are supported by;

- **Non-statutory technical standards for sustainable drainage systems** (SuDS) which provide guidance to local authorities and developers on how to achieve SuDS on new developments. <https://www.gov.uk/government/publications/sustainable-drainage-systems-non-statutory-technical-standards>
- A ministerial statement released by the Secretary of State for Communities and Local Government made an amendment to the **Town and Country Planning Order 2010**, this made two new requirements of RCC;
 - RCC as a LLFA are a statutory consultee to the Local Planning Authority (LPA) for surface water flood risk considerations.
 - RCC as a LPA are required to deliver SuDS on all new major developments.

<http://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2014-12-18/HCWS161/>

2.2 Local Context

2.2.1 Preliminary Flood Risk Assessment (PFRA)

RCC published the Rutland PFRA in 2011 and this was later updated in 2017 following a review of the latest flood risk data. The PFRA report can be found using the link below:

<http://rutlandcounty.moderngov.co.uk/Data/Cabinet/20110705/Agenda/92-2011%20Flood%20Risk%20Assessment%20%20-%20Annex%201.pdf>.

The PFRA must report any floods which have had 'significant harmful consequences'. The definition of 'significant harmful consequences' must be set by each LLFA. The definition for Rutland is as follows:

- Five or more residential properties flooded internally.
- Two or more non-residential properties flooded;
- One or more critical service (e.g. hospital);
- A class 'A' road or railway totally impassable for more than 2 hours;
- A class 'B' or 'C' road totally impassable for more than 10 hours; and/or
- An unclassified road totally impassable for more than 24 hours.

Five residential properties represents approximately one order of magnitude below the national criteria of 200 people (85 properties) per 1km², rounded down to take account of the rural nature of Rutland.

The transport link closure durations have been selected on the basis that they would cause significant disruption to travel patterns, business or local communities.

At the time of the last review of the PFRA there had been no flood events recorded that exceeded the thresholds above with flood risk historically being seen as a relatively low risk in Rutland.

As a part of the recent review of national flood risk datasets a new nationally significant Flood Risk Area has been identified in Oakham, which places a requirement on Rutland County Council under the Flood Risk Regulations to better understand that risk and where necessary produce flood hazard maps or flood management plans.

Details relating to the identified risk can be found in chapter 5 with appropriate actions set out in chapter 7.

2.2.2 Rutland Strategic Flood Risk Assessment

The Level 1 Strategic Flood Risk Assessment (SFRA) for RCC collated flood risk data and provides a strategic overview of flood risk for the area to support the preparation of the local plan and inform planning decisions.

The Level 2 SFRA builds on this, concentrating on the risk around Oakham and Uppingham in more detail. The information presented around the risks in Oakham will be an essential resource for investigating the Flood Risk Area set out in the Rutland PFRA.

These assessments include considerations of all sources of flooding and provide some detail of climate change implications. At the time of writing the Local Plan was under review with the 2009 SFRA remains the local flood risk evidence base for that review.

2.2.3 Catchment Flood Management Plans (CFMP)

The CFMPs are set at a river catchment level and focus on all inland flood risk, dividing the catchments into sub-areas based on their characteristics. The most appropriate policy for that sub-area is then set out based on the level of risk in that area. The plans then propose actions to implement the preferred policies.

The Rutland area is covered by three CFMPs, namely those for the rivers Witham, Welland and Trent, these are all classified as low to moderate risk. The CFMPs and associated policy units are listed below along with links to those documents. The combined aims of the associated policy units and how they may be addressed through the local action plan is set out in chapter 7.

Welland CFMP; Rutland is highlighted in three sub-areas including;

1. Upper tributaries (policy 2),
2. Welland and Glens (policy 2) and
5. Oakham (policy 3).

All three sub-areas are considered to be low to moderate risk.

<https://www.gov.uk/government/publications/river-welland-catchment-flood-management-plan>

Witham CFMP, Rutland is highlighted in the (1) Upper Witham sub-area which is classified as low to moderate risk (policy 2).

<https://www.gov.uk/government/publications/river-witham-catchment-flood-management-plan>

Trent CFMP, Rutland sits in the area classified as (8) 'Rural Leicestershire' which is classified as low to moderate risk (policy 6)

<https://www.gov.uk/government/publications/river-trent-catchment-flood-management-plan>

2.2.4 River Basin Management Plans

These plans were created to fulfil the Water Framework Directive requirements providing protection and improvements to the water environment. First drafted in 2009 these plans were updated in 2015. There are 11 River Basin Districts within England and three of them have headwaters in the RCC area.

Anglian RBMP <https://www.gov.uk/government/publications/anglian-river-basin-district-river-basin-management-plan>

Humber RBMP <https://www.gov.uk/government/publications/humber-river-basin-district-river-basin-management-plan>

Severn RBMP <https://www.gov.uk/government/publications/severn-river-basin-district-river-basin-management-plan>

2.2.5 Flood Risk Management Plans

The production of Flood Risk Management plans was one of the requirements of the Flood Risk Regulations 2009, they are set at a River Basin level and designed to explain the risks of flooding from rivers, seas, surface water, groundwater and reservoirs setting out how the stakeholders will work together to manage those risks.

Anglian FRMP, <https://www.gov.uk/government/publications/anglian-river-basin-district-flood-risk-management-plan>

Humber FRMP, <https://www.gov.uk/government/publications/humber-river-basin-district-flood-risk-management-plan-frmp-scoping-report>

Severn FRMP <https://www.gov.uk/government/publications/severn-river-basin-district-flood-risk-management-plan>

3.0 RESPONSIBILITIES

There are a range of bodies who have responsibilities for managing flood risk and this chapter looks to identify those bodies and provide a summary of their responsibilities.

3.1 Organisations

The Environment Agency

The Environment Agency (EA) is responsible for taking a strategic national overview of the management of all sources of flooding and coastal erosion, setting out the long term approach for how they will be managed.

The agency also has operational responsibility for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea, as well as being a coastal erosion risk management authority. The EA allocates funding nationally and also delivers projects to manage these risks.

The EA works in partnership with other organisations such as RCC to develop skills and resources as well as gather evidence to assist in managing local flood risks. The LFRMS has been developed in conjunction with the EA to ensure consistency with the national strategy and with the aim of developing an integrated and sustainable approach to flood risk management.

Water and Sewerage Companies (WaSCs)

Anglian Water and Severn Trent Water are the WaSCs that serve the Rutland area. WaSCs play a major role in managing flood risk. They manage the risk of flooding to water supply and sewerage facilities and the risk to others from the failure of their infrastructure. The main roles of WaSCs in managing flood risks are to:

- make sure their systems have the appropriate level of resilience to flooding, and maintain essential services during emergencies;
- maintain and manage their water supply and sewerage systems to manage the impact and reduce the risk of flooding and pollution to the environment;
- provide advice to LLFAs on how WaSC assets impact on local flood risk;
- work with developers, landowners and LLFAs to understand and manage risks – for example, by working to manage the amount of rainfall that enters sewerage systems; and
- work with the EA and RCC to coordinate the management of water supply and sewerage systems with other flood risk management work. They also need to have regard to FCERM plans in their own plans and work.
- ensure that regular inspections and the standard of protection for Rutland Water are sustained as required by the Reservoirs Act.

Where there is frequent and severe sewer flooding, (sites included on the DG5 Register) sewerage undertakers are required to address this through their capital investment plans, which are regulated by Ofwat.

Highways England

Highways England have responsibility for ensuring that the A1 is drained and that they cooperate with other risk management authorities to ensure their flood risk management duties are coordinated.

Rutland County Council

The policy and legislation set out in chapter 2 places a wide range of roles upon Rutland County Council. These roles are summarised in the table below with reference to the appropriate statute and details of how these roles are delivered.

Role	Source	Delivery body
Delivery of a Preliminary Flood Risk Assessment to cover local flood risk. Further investigation into the Flood Risk Area identified through the PFRA.	Flood risk regulations 2009	Lead Local Flood Authority
Coordinating local flood risk and setting out local priorities Development of a Local Flood Risk Management Strategy with subsequent overseeing of delivery of the actions and updating or reviewing of the strategy. Development and continued updating of a register of significant flood risk assets Investigation of flooding events with significant harmful consequences as described in 2.2.1.	Flood and Water Management Act 2010	Lead Local Flood Authority Coordination of risk and setting out of priorities will also be achieved through participation in the Regional Flood and Coastal Committee (see 3.3)
To act as a statutory consultee to the Local Planning Authority so as	Town and Country	Lead Local Flood Authority to provide statutory consultee role to the Local

to provide advice on local flood risk	Planning Order	Planning Authority with the Local Planning Authority acting to ensure SuDS are delivered.
To ensure delivery of SuDS on all major planning applications in Rutland		
To act as category one responders for emergency events ensuring an appropriate level of preparedness	Civil contingencies Act 2004	Rutland County Council continue to work as a member of the Local Resilience Forum (see 3.3)
Provide ordinary watercourse consenting and enforcement	Land Drainage Act 1991	Lead Local Flood Authority to also act as the Land Drainage Authority within Rutland.
Act on permissive powers for works on ordinary watercourses		
Provide adequate drainage of the local highway network, including construction of new roads and improvements to the existing network, ensuring flood risk is not increased	Highways Act 1980	Rutland County Council Local Highway Authority

3.2 Riparian Responsibilities

People who own land which adjoins a watercourse (also known as riparian owners) have a responsibility to make sure that the flow of water is not obstructed (for example, by clearing vegetation). The rights and responsibilities of the riparian owner include the maintenance of any culverts or bridges that affect the flow of water.

It will be assumed that land owners adjacent to a watercourse will own up the centre line of that watercourse unless there are land ownership records to confirm the boundary line as different.

The riparian owner must not carry out any work that can pollute the watercourse and where the riparian owner wishes to make changes to the watercourse or abstract water from the flow they will need to seek the necessary permissions from the appropriate risk management authority. More details on the rights and responsibilities of a riparian owner, including permits and consents can be found in the Environment Agency produced document 'Living on the edge' <https://www.gov.uk/government/publications/riverside-ownership-rights-and-responsibilities>

Appendix 1 - Rutland County Council - Local Flood Risk Management Strategy

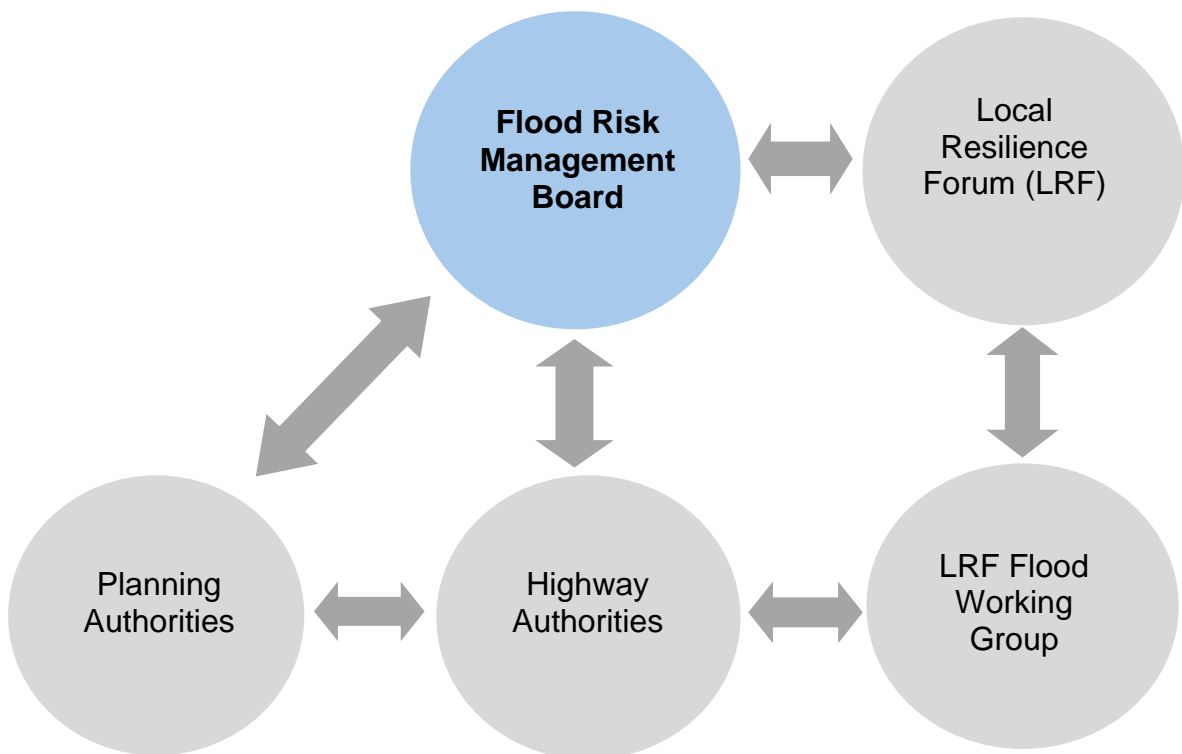
Organisation	Responsibility	Contact details
Rutland County Council	Highway drainage	01572 722 577 highways@rutland.gov.uk
Environment Agency	Main Rivers and Reservoirs	Tel: 03708 506506 Floodline 03459881188
Highways Agency	A1 drainage	Tel 0300 1235000 info@highwaysengland.co.uk
Anglian Water	Sewers	Tel: 03457 145145
Severn Trent Water	Sewers	Tel: 0800 783 4444

3.3 Joint Strategic Approach

The Flood and Water Management Act requires Rutland County Council to bring together partners to manage the local flood risk. Much of the local flood risk knowledge and technical expertise lies with partner organisations including the Environment Agency (EA) so it is crucial that these partners work together to ensure effective and consistent management of local flood risk.

It is important to take a holistic approach to flood risk management that will include flooding from main rivers, surface water and ordinary watercourses, as well as looking to provide additional benefits, for example through water quality improvement or habitat potential.

To ensure cooperation and coordination with other relevant bodies RCC is a member of a **Flood Risk Management Board** covering the area of the **Leicester, Leicestershire and Rutland Local Resilience Forum (LRF)**. In addition to the three LLFAs, membership of the Board includes the EA, WaSCs and Leicestershire Districts. A diagrammatic representation of the Board and its relationships is shown below:



The LRF is a multi-agency forum that coordinates work on risk assessment, contingency planning, training and exercises to enhance our preparedness for emergencies.

RCC also participate in the **Regional Flood and Coastal Committees (RFCCs)** which are primarily responsible for ensuring there are coherent plans to identify, communicate and manage the risk from all sources of flooding. RFCCs also have a key role in allocating government grants for flood risk management to efficient, targeted and risk-based projects.

4.0 TYPES OF FLOODING

Watercourse flooding (fluvial) happens when the watercourse overtops the bank and floods nearby areas. This flooding can occur from small watercourses as well as main rivers and is usually a result of rainfall or snow melt increasing the volume of water entering a watercourse. It can also occur as a result of blockages and debris building up and preventing water from flowing downstream.



Surface water flooding (pluvial) occurs when water accumulates on the surface because the amount of rain falling on an area is too great for the drains or the ground to cope with. Also known as flash flooding this can be sudden and difficult to predict.



Flooding from sewers is caused when the pipes receive more water than they are designed to take or a blockage is restricting the amount of water they can carry. Blockages can be caused by collapsed pipes or tree roots but are often a result of what is put down the drains such as fats, unwanted concrete or litter.



Groundwater flooding occurs as a result of water rising up through the ground from underground stores such as aquifers. This type of flooding tends to occur after prolonged periods of rainfall. Low lying areas are more susceptible but natural springs can appear on the hillsides as the groundwater table rises.



Flooding from canals and reservoirs is caused by overtopping and failures such as seepage through the banks which can result in damage over time as the flowing water causes erosion. Failures can also take place around any control structures such as weirs and sluices if they become damaged.



Flooding from the sea occurs as a result of very high tides, storm surges or high waves flooding low lying areas along the coast. This is ever changing as natural process continue to change the coast line.



5.0 FLOOD RISK IN RUTLAND

5.1 Historical Events

Whissendine

Whissendine Brook is an ordinary watercourse which drains the area to the south of Whissendine. It has a confluence with an unnamed ordinary watercourse immediately south of Main Street before passing under the road and flowing north. The brook has a history of exceeding its bank capacity and flooding Main Street which becomes impassable. The adjacent public house has property level protection which appears to be effective.

Langham

Langham Brook is an ordinary watercourse which had a history of exceeding its bank capacity. Action was taken in the 1990s to ensure riparian owners kept the brook clear of obstruction. The watercourse continues to be monitored on a regular basis to minimise the potential for future flooding problems.

Schofield Road Culver, Oakham

Barleythorpe Brook is a main river which was culverted under the Oakham to Melton Canal in the 1800s. This area was developed in the 1980s and 90s and the culver extended under the adjacent estate roads. In the event of a collapse or blockage of the culvert locally significant flooding may occur.

River Chater, Ketton, November 2000

The Rutland SFRA highlights a flood event from the River Chater in November 2000. This followed one of the wettest recorded autumns in the UK and coincided with widespread flooding throughout Europe. It is understood that extensive flooding of farmland around Ketton also occurred at this time as the River Welland channel capacity was exceeded.

Highways flooding, various locations, 2013 & 2016

Heavy rainfall events experienced in July 2013 and March 2016 lead to a temporary build up of surface water on the highway in a number of locations. This was caused by the high intensity of the rain fell and the drainage network being unable to drain the surface in time. These storms caused widespread damage throughout the UK. On both occasions the water quickly drained away as the storms eased and there were no reported incidents of property flooding within Rutland.

5.2 Future flood risk

The types of flooding described in chapter 4 often occur together and can sometimes be difficult to distinguish. This is due to the integrated nature of the water network and how it responds to heavy rainfall. For example land

can be unable to drain or sewers to discharge if a receiving watercourse or river is already full.

The Flood Risk Area identified in the PFRA is covered under the 'Surface Water' section below.

5.2.1 Watercourses

The main river flood risk mapping produced by the EA shows a small number of properties as being at risk from fluvial flooding in Caldecott, Greetham, Ketton, Langham, Oakham, Ryhall, Tolethorpe, Tickencote and Whissendine. This mapping can be found on the EA website. (<https://flood-warning-information.service.gov.uk/long-term-flood-risk>). Not all bridges, culverts and weirs are represented in the models that produce these maps which may affect the end result.

There is currently only one **flood warning area** in Rutland and this is based on the River Welland through Ketton. This provides a flood risk warning service for the main river to residents that have subscribed to the service.

The risk from flash flooding that is associated with heavy rainfall landing on the uplands around Rutland and how that water then interacts with the watercourses is described in the 'Surface Water' section below.

There are a number of locations where these watercourses pass through urban areas or under roads and become culverted. These **culverts** can act to restrict the flow of water passing along the watercourse, especially if debris partially blocks the flow of that water.

The Flood Zone for the main rivers and a number of watercourses can be found within Appendix A of the Rutland SFRA, an extract detailing the area of Whissendine and Langham is included in Appendix B of this document. The Environment Agency periodically updates the Flood Maps for Planning (Rivers and Sea) which shows flood zones as defined by NPPF and these are available online. <https://flood-warning-information.service.gov.uk/long-term-flood-risk>

The overall risk from fluvial flooding across Rutland is considered to be low.

5.2.2 Surface Water

The presence of relatively steep slopes comprising of a clay soil to the west and north of Rutland present a potential risk of increased surface water runoff. This is due to the low permeability of the clay soils which results in water ponding or running to low spots before it has time to infiltrate.

In normal rain conditions this water flows at a steady rate from the higher ground through a network of watercourses and into the receiving rivers. In times of heavy rainfall the volume of water will be increased and the risk of the watercourses over topping and flooding adjacent land is greater. Water can also be seen to create new flow paths away from the route of the watercourses. A map showing these flow paths is included in Appendix B of this document.

These types of events have occurred in the head waters of the Trent catchment previously in both Langham and Whissendine where surface runoff has increased the flows in the watercourse and led to banks overtopping. Measures are now in place to mitigate the risk at these locations as described in 5.1 with continued monitoring of the risk taking place.

As described in chapter 4 of this document surface water flooding can also occur with **high intensity rainfall** which exceeds the capacity of the local drainage network. This will ordinarily present itself as highway flooding in the first instance and if rainfall continues or the rainfall is accompanied by snow melt the flooding can persist and present risk to low lying properties. There have been a number of events of intense rainfall in recent years that have caused flooding across the region, in these instances the highway areas in Rutland were found to drain away shortly after the storm events occurred. Given the localised nature of storms this type of event is difficult to predict and heavily influenced by the operational condition of local drainage features.

The nationally significant **Flood Risk Area in Oakham** was identified through a review of the Risk of Flooding from Surface Water (RoFSW) maps which highlighted where properties, people and key services may be at risk. This was then reported through the Rutland PFRA which detailed that further work would need to be undertaken to better understand this risk.

It is understood that the model used to generate the RoFSW mapping utilised synthetic aperture radar (SAR) for topography rather than the more accurate LIDAR due to the extent and availability of the data at the time. Future LIDAR data is expected to be available to rerun the modelling which will allow a further analysis of the level of risk in the area. An extract map from the PFRA can be found in Appendix B of this document. Section 5.2 of the Rutland Level 2 SFRA provides some detail on the catchments serving Uppingham and Oakham.

Prior to the notification of the FRA in Oakham the level of flood risk was always considered to be low, this in turn emphasises the importance of trying to establish why this risk has been identified.

5.2.3 Sewer Flooding

Sewer flooding has occurred in Rutland and is reported to and acted on by Anglian Water (AW) and Severn Trent Water (STW). Properties that are affected are recorded by AW or STW on their DG5 registers.

5.2.4 Groundwater Flooding

The presence of existing springs and a limestone bedrock in the area suggest that ground water flooding could indeed be possible in Rutland. However, to date there have been no reported groundwater flooding incidents and the risk is considered to be low.

5.2.5 Reservoirs

Eyebrook reservoir and Rutland Water are both covered by the requirements of the Reservoir Act 1975. This means the reservoirs are well managed and constantly monitored. Combining this level of management with the design standards that are placed on reservoirs means the level of flood risk from the reservoirs is low. As a part of the Reservoirs Act there is a need to create an onsite reservoir plan which sets out how to respond to an emergency incident.

5.2.6 Oakham Canal

Oakham Canal has not been in use since the 1840s and has been partially filled in. There are still sections of open water along the route between Oakham and Melton Mowbray but these water bodies do not receive concentrated water flows any longer and are considered to be of negligible flood risk.

5.2.7 Sea flooding

Rutland is not at risk from Tidal flooding or coastal erosion.

5.2.8 Changing risk levels

United Kingdom Climate Projections show **climate change** as leading to warmer wetter winters and drier summers. The anticipation is that the summer rainfall will arrive as short, more intense storms.

This has the potential to place additional burdens on the assets of all the risk management authorities in Rutland. The NPPF requires climate change to be considered in designing for flood risk on all new developments and the risk management authorities in the area will consider the implications of climate change when they look to carry out work on their existing assets.

In addition to climate change the gradual expansion of hard standing within urban areas is also placing a greater burden on our drainage systems.

Simple changes such as building extensions and converting gardens to patios or driveways all have a relatively small effect but they combine to contribute what can be quite a notable increase in the volume of water entering the drainage network as it is no longer able to soak into the ground.

6.0 AIMS AND OBJECTIVES

6.1 The aims of the LFRMS are as follows:

- Build good communication links with internal and external partners, neighbouring authorities and flood risk management authorities.
- Communicate with the public, set realistic expectations and outcomes with regard to managing local flood risk and engage with local communities.
- Lessen chances or prevent financial loss as a result of flooding.
- Support the implementation of the water framework directive by:
 - Encouraging the naturalising of channels and de-culverting of water courses.
 - Increasing biodiversity of open spaces linked to natural water courses and areas contributing to the management of flood risk.
 - Improve water quality and improve the quality of public open space wherever the opportunity arises.

6.2 The following objectives take account of the guiding principles set out in the national strategy:

- Reduce the number of properties at risk from flooding.
- Help residents, property and business owners in the area become more resilient to flood events.
- Reduce the area of highway under water for a given storm event and minimise traffic disruption from flooding.
- Increase the area of green space contributing to the mitigation of flood risk.
- Reduce the number of pollution incidents affecting watercourses.

7.0 ACTION PLAN

Full action plan attached as Appendix C.

Below is a listed combination of all CFMP actions related to the necessary Policy Units, the related action from the Rutland action plan is then cross referenced.

CFMP actions	Proposed actions in Rutland LFRMS
Investigation of potential for reduced maintenance (Welland CFMP sub-area 1, 2 and 5) (Witham CFMP sub-area 1)	18
Look at how land use and management can lead to environmental and flood risk improvements (Welland CFMP sub-area 1, 2) (Trent CFMP sub-area Rural Leicestershire)	18, 23 & 24
Continue existing flood warning function (Welland CFMP sub-area 1, 2 and 5) (Witham CFMP sub-area 1)	27
Continued maintenance of Rutland water (Welland CFMP sub-area 1)	18
Use of planning policy to manage flood risk and prevent inappropriate development (Welland CFMP sub-area 1, 2 and 5) (Witham CFMP sub-area 1)	1, 2, 3 & 4
Continued maintenance of Eye Brook Reservoir (Welland CFMP sub-area 2)	18
Investigation of groundwater flooding (Welland CFMP sub-area 2)	11
Investigate the feasibility of expanding culverts (Welland CFMP sub-area 5)	11
Investigate the risk to critical infrastructure (Welland CFMP sub-area 5)	10, 11 & 13
Work to develop emergency response plans for critical infrastructure and transport links at risk (Witham CFMP sub-area 1)	14 & 15
Investigate the feasibility of water storage in tributaries of the River Soar (Trent CFMP sub-area Rural Leicestershire)	11, 23 & 24
Investigate potential opportunities for creating flood attenuation or wetland areas (Trent CFMP sub-area Rural Leicestershire)	11, 23 & 24
Identify sites for biodiversity action plan (BAP) habitat creation (Trent CFMP sub-area Rural Leicestershire)	11, 23 & 24

8.0 STRATEGY REVIEW

8.1 Review periods

There are no formal deadlines set out in legislation for how frequently the strategy or the action plan need to be reviewed.

This strategy will be reviewed every five years with the action plan updated annually. On occasion there may be need to update the strategy if there are significant changes to partner responsibilities, learning from local flood events or changes to policy and legislation.

8.2 Review body

Triggers for updating the strategy will be considered by the Leicester, Leicestershire and Rutland Flood Risk Management Board with updates carried out by Rutland County Council through consultation with all local flood risk management authorities.

APPENDIX A - GLOSSARY

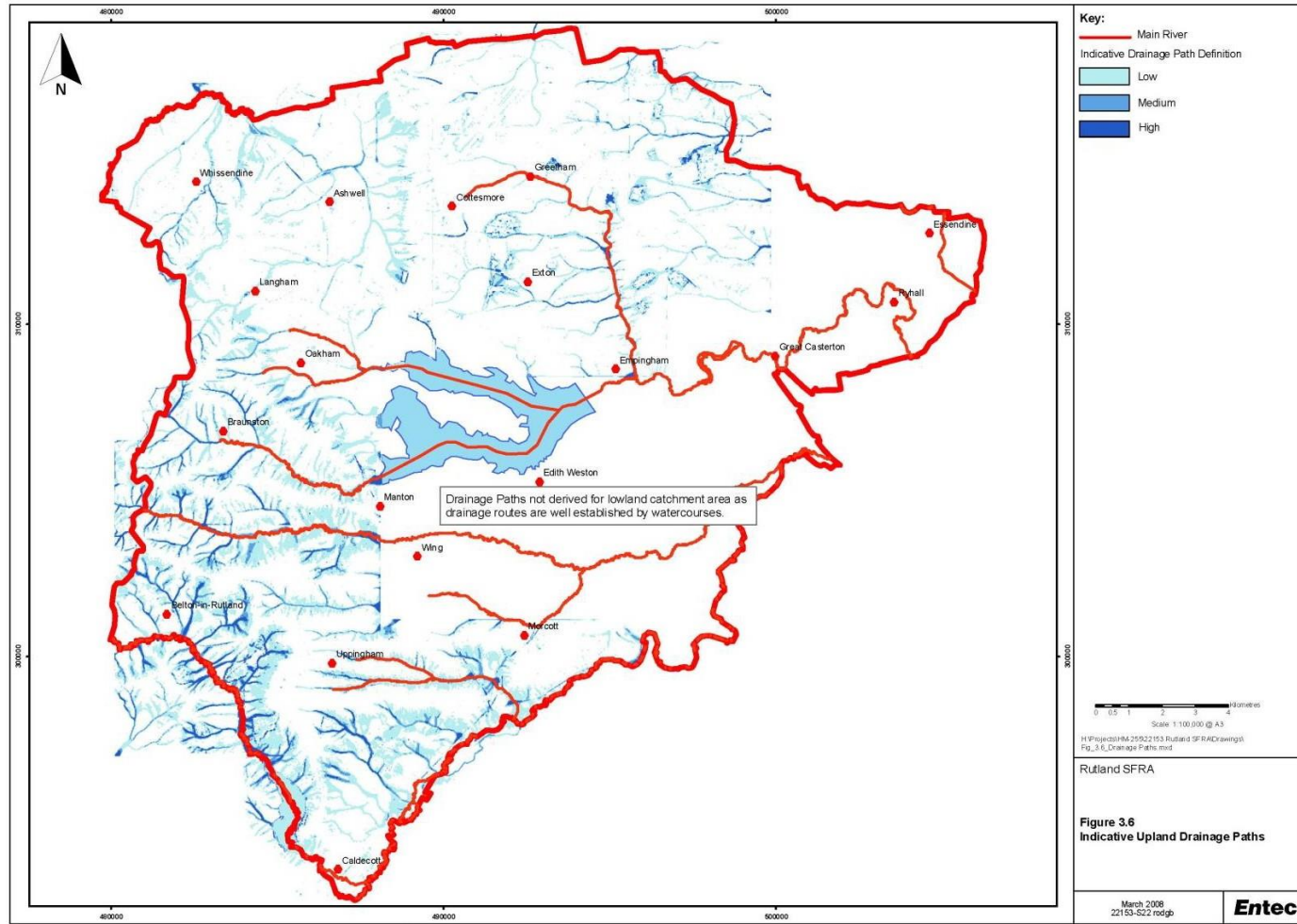
Aquifer	An underground layer of water-bearing rock. It is permeable, meaning that liquids and gases can pass through them
AStSWF	Areas Susceptible to Surface Water Flooding.
AW	Anglian Water
CFMP	Catchment Flood Management Plan
Conveyance	Allowing for the uninterrupted transport of water.
DEFRA	Department for Environment, Food and Rural Affairs.
DG5	Sewer Flooding Register
EA	Environment Agency
Erosion	Process where materials are broken down by earth processes
Estuary	Mouth of a river where it discharges into the sea
FCERM	Flood and coastal erosion risk management
Fluvial flooding	Flooding caused by river system exceeding its bank full level
Flood alleviation	To reduce the risk of flooding
Flood defence	Barrier to limit the extent/ occurrence of a flood event
Flood resilience	Take measures to reduce the impact of a flood event and guarding against flooding
FMfSW	Flood Map for Surface Water
FRMP	Flood risk management plan
FWMA	Flood and Water Management Act
FRR	Flood risk regulations
Green corridors	Strip of land that provides habitats and movement of wildlife
LA	Local Authority
LCC	Leicester City Council
LDF	Local Development Framework
LFRMS	Local flood risk management strategy
LLFA	Lead local flood authority
Main river	A watercourse shown on the main river map, for which the EA has responsibility
Ordinary watercourse	A watercourse that is not a main river and is the responsibility of the lead local flood authority
Permeable/ impermeable	Allowing water to pass through/not pass through
PC	Parish Council
PFRA	Preliminary flood risk assessment
Pluvial flooding	Flooding from rainfall or precipitation
RCC	Rutland County Council
Reservoir	A body of water that is used storage
Riparian owners	People who own land which adjoins a watercourse
SAB	Sustainable drainage system approval body
SEA	Strategic environmental assessment
SFRA	Strategic flood risk assessment

Appendix 1 - Rutland County Council - Local Flood Risk Management Strategy

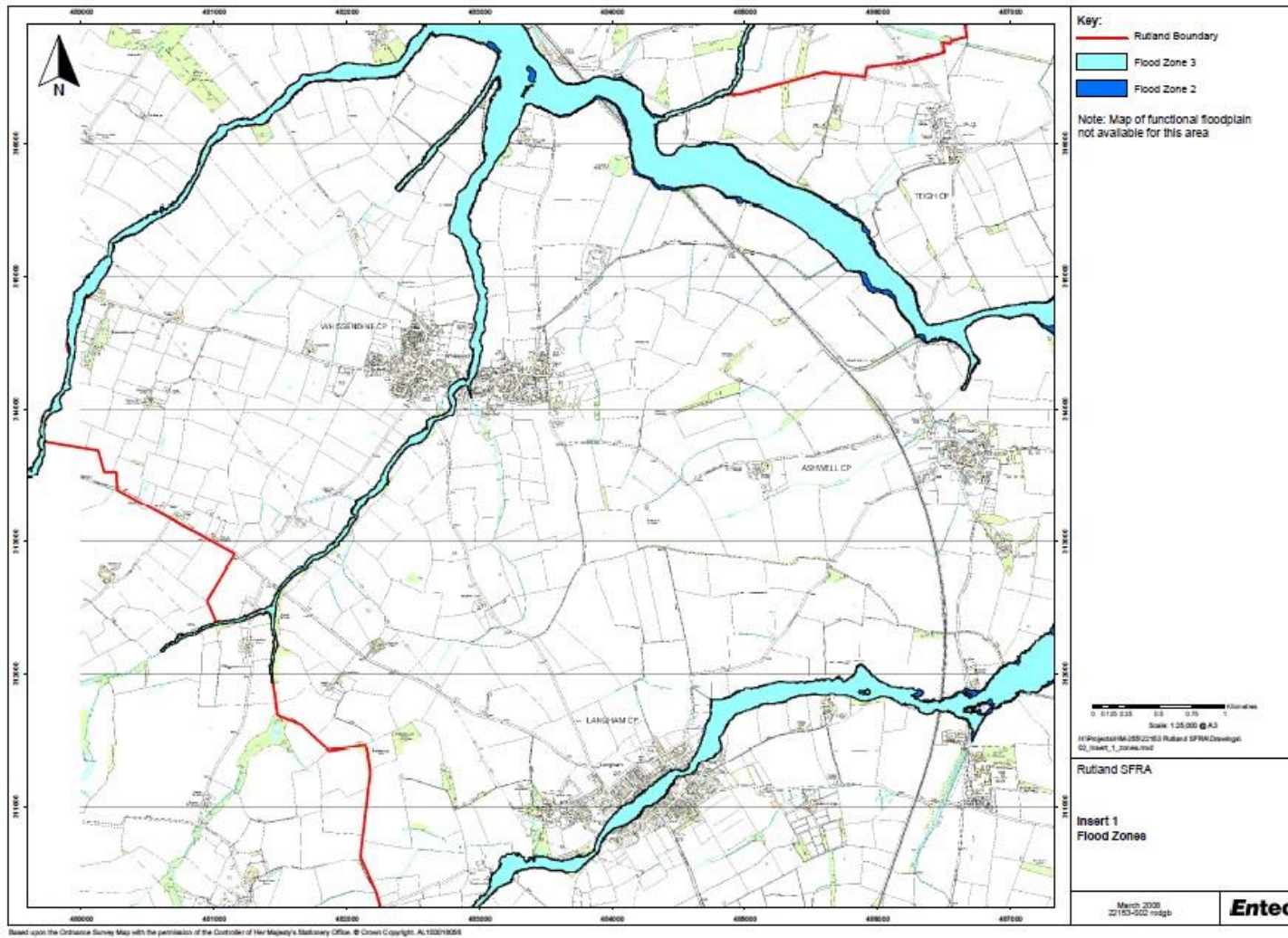
SSSI	Site of Special Scientific Interest
STW	Severn Trent Water
SuDS	Sustainable drainage system
SWMP	Surface water management plan
Sewerage	The infrastructure (receiving drains, manholes, pumping stations, storm overflows etc.) that carry sewage (the waste carried by water)
Statutory consultees	Organisations that by law must be consulted on LFRMS
UKCP	United Kingdom Climate Projections
WaSC	A Water and Sewerage Company such as AW or STW
Wetland	Area of land that can hold water temporarily or permanently

APPENDIX B - MAPS

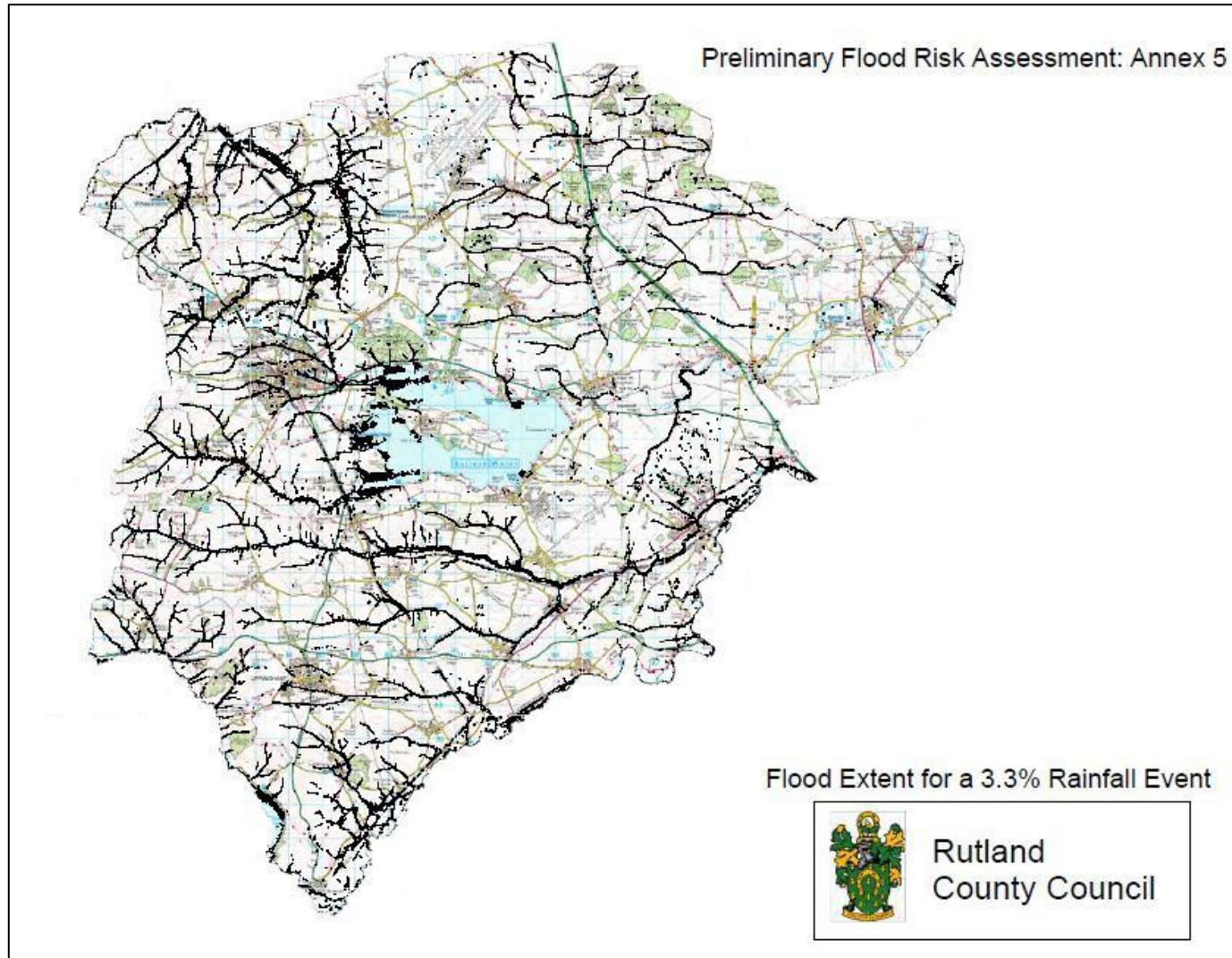
Indicative Upland Drainage Paths extract from Rutland SFRA (2009)



Flood Zones extract from Rutland SFRA (2009)



3.3% Risk of Flooding from Surface Water extract from Rutland PFRA (2017)



APPENDIX C – ACTION PLAN

See spreadsheet below:

Action Reference	Task	Partners	Time Frame	Cost and funding info (costs to nearest £1k)	Direct link to legislation	Planned Review Date	Previous Review Date	Current Position	Notes
1	Set up process enabling the Lead Local Flood Authority to respond to Planning Applications as a statutory consultee	RCC	Apr-15	In-house resources	FWMA 2010	N/A		Completed	
2	Provide SUDs advice on new development as part of the development control process and ensure that SUDs schemes consider climate change and show flood paths on drawings.	RCC	Ongoing	In-house resources	FWMA 2010	Sep-18		In progress	
3	Alignment of planning policies with LFRMS	RCC	Apr-20	In-house resources		Sep-18		In progress	
4	Flood risk management strategy embedded within planning and economic development activity .	EA	Apr-25	In-house resources		Sep-18		Not started	
5	Put in place a process for assessing Land Drainage Consents on ordinary watercourses	RCC	Apr-12	In-house resources	FWMA 2010	N/A		Completed	
6	Continued assessment of third party works on ordinary watercourses as land drainage consents	RCC	Ongoing	In-house resources	FWMA 2010	Sep-18		In progress	
7	Designate assets serving important flood risk management functions	RCC	Ongoing	In-house resources	FWMA 2010	Sep-18		Not started	
8	Investigate and report on any flooding incidents that have significantly harmful effects	RCC	Ongoing	In-house resources	FWMA 2010	Sep-18		In progress	
9	Collection of information on assets which are likely to have a significant effect on flooding.	RCC	Ongoing	In-house resources	FWMA 2010	Sep-18		In progress	
10	Further investigation of the Oakham Flood Risk Area through a localised surface water management plan. To include LIDAR updates of the RoFSW mapping, a detailed assessment of assets at risk, the flooding mechanisms and consequences and consideration of what mitigation could be put in place to reduce or managed the risk.	RCC	Apr-20	EA to carry out LIDAR update	FRR 2009	Sep-18		Not started	Costs estimated based on neighbouring authorities
11	Expand understanding of all flood risks across the wider area, outlining potential mitigation needs	ALL	Ongoing	In-house resources		Sep-18		In progress	
12	Survey and digitilisation of drainage assets	RCC	Apr-22	In-house resources		Sep-18		Not started	
13	Investigate potential locations for flow monitoring schemes in accordance the the SWMP	RCC	Apr-20	30,000 (if required from existing drainage budget)		Sep-18		Not started	
14	Create and implement improved internal emergency planning procedures across the Council through RCC emergency flood plan.	RCC	Apr-20	In-house resources	CCA 2004	Sep-18		Completed	
15	Emergency management preparedness including holding stocks of sandbags.	RCC	Ongoing	In-house resources	CCA 2004	Sep-18		Completed	
16	Participation in the Leics and Rutland Local Resilience Forum	RCC	Ongoing	In-house resources	FWMA 2010	Sep-18		In progress	
17	Sharing any risk updates or SWMP results with LRF partners to feed into future updates of the LRF multi agency flood plan	RCC, EA	Apr-19	In-house resources	CCA 2004	Sep-18		Not started	
18	Provide maintenance regimes that allow no deterioration in the flood risk protection, considering efficiencies and potential environmental improvements	ALL	Ongoing	Partner maintenance budgets	FWMA 2010	Sep-18		In progress	

Action Reference	Task	Partners	Time Frame	Cost and funding info (costs to nearest £1k)	Direct link to legislation	Planned Review Date	Previous Review Date	Current Position	Notes
19	Highway drainage maintenance , road gully replacements, highway improvements, watercourse and ditch maintenance with targeted maintenance based on flood risk data.	RCC	Ongoing	122,000 (existing budget)	Highways Act 1980	Sep-18		In progress	
20	Highway culvert maintenance	RCC	Ongoing	20,000 (existing budget)	Highways Act 1980	Sep-18		In progress	
21	Manage flood risk by designing new drainage systems that can safely accommodate rainfall and flooding that exceeds their drainage capacity (design for exceedance). Design will include for blue corridors (temporary store of floodwaters).	RCC	Ongoing	In-house resources	Highways Act 1980	Sep-18		In progress	
22	Where flooding is identified as a result of highway runoff, alter kerb alignments to manage flow.	RCC	Ongoing	In-house resources	Highways Act 1980	Sep-18		In progress	
23	Continue to explore opportunities to work with local landowners, farmers and associated representatives to improve flood risk and the water environment	RCC, EA	Ongoing	In-house resources		Sep-18		Not started	
24	Look to incorporate environmental improvements into any new flood risk works	ALL	Ongoing	In-house resources		Sep-18		Not started	
25	Continue to support partners and landowners in finding resolutions to flood issues, acting as mediator where necessary.	RCC, EA	Ongoing	In-house resources	FWMA 2010	Sep-18		In progress	
26	Assist communities in establishing their own flood action plans thereby encouraging the public to better defend their properties.	RCC, EA	Apr-20	In-house resources		Sep-18		Not started	
27	Build up flood risk awareness within the local communities and provide details of what individuals can do to deal with flooding and warning services available. Highlight the benefits to residents of early action (e.g. reduced insurance premiums)	ALL	Apr-20	In-house resources		Sep-18		Not started	
28	Help to inform the local community of the causes of pollution , measure that can be taken to prevent it occurring and collect information on reported pollution incidents	ALL	Apr-20	In-house resources		Sep-18		Not started	

APPENDIX D – STRATEGIC ENVIRONMENTAL ASSESSMENT SCREENING

Summary

Beyond the management of local flood risk, the spirit of the strategy is to improve the consideration of the environment and, where possible, incorporate improvements through capital schemes or changes in operational behaviour. Any projects identified through the actions of this strategy will each be subject to the usual environmental protections, as are any operational activities of the local risk management authorities.

The Office of the Deputy Prime Minister released 'A Practical Guide to the Strategic Environmental Assessment Directive' in 2005, the table below is adapted from figure 2 of that same document (*Application of the SEA Directive to plans and programmes*) and illustrates the route this strategy takes through that flow chart along with justifications.

Step	Need	Justification
1. Is the PP (plan or programme) subject to preparation and/or adoption by a national, regional or local authority OR prepared by an authority for adoption through a legislative procedure by Parliament or Government? (Art. 2(a))	Y	The plan is to be developed by Rutland County Council. Pass to step 2.
2. Is the PP required by legislative, regulatory or administrative provisions? (Art. 2(a))	Y	Required under the Flood and Water Management Act 2010 Part 1(9). Pass to step 3.
3. Is the PP prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use, AND does it set a framework for future development consent of projects in Annexes I and II to the EIA Directive? (Art 3.2(a))	N	The Local Flood Risk Management Strategy will be prepared for water management and set out existing policies and legislative drivers, along with all the Risk Management Authorities and their responsibilities and powers. The strategy will look to provide an overview of how partners already work together and actions for those partners to address. The strategy will not include a framework for consenting specific projects as described in Article 1(2) of the EIA Directive. Pass to step 4.
4. Will the PP, in view of its likely effect on sites, require an assessment for future development under Article 6 or 7	N	There are no objectives or actions included in the strategy that intend to effect any

of the Habitats Directive? (Art. 3.2 (b))		designated sites. The strategy will include actions to consider opportunities for new habitat in any new flood risk management works which feeds through from local Catchment Flood Management Plans.
Pass to step 6.		
5. Does the PP Determine the use of small areas at local level, OR is it a minor modification of a PP subject to Art. 3.2? (Art. 3.3)	N/A	Step 5 not appropriate
6. Does the PP set the framework for future development consent of projects (not just projects in annexes to the EIA Directive)? (Art 3.4)	N	The strategy will help to more clearly set out some of the existing considerations of future projects including responsibilities and priorities in local flood risk management, with a view to bringing interested parties together to address those priorities. However it is beyond the scope of the strategy to set the framework for future projects. It will, simply be a resource for those undertaking assessing and delivering projects.
Pass to 'does not require SEA'		
7. Is the PP's sole purpose to serve the national defence or civil emergency, OR is it a financial or budget PP, OR is it co-financed by structural funds or EAGGF programmes 2000 to 2006/7? (Art 3.8, 3.9)	N/A	Step 7 not appropriate
8. Is it likely to have a significant effect on the environment? (Art. 3.5)	N/A	Step 8 not appropriate

Under Article 3(5) the Strategic Environmental Assessment Directive requires a determination of the likely significant effect of plans or programmes, the criteria for assessment is then set out in Annex II of the Directive. This strategy is not expected to provide a negative effect under any of the criteria listed and should lead to a gradual improvement in the local environment through partnership collaboration and encouragement of environmental considerations in flood risk management.

<https://www.gov.uk/government/publications/strategic-environmental-assessment-directive-guidance>

APPENDIX E – IMPACT ASSESSMENT SCREENING

Subject Title:	Local Flood Risk Management Strategy		
Officer completing:	Dave Brown		
Purpose of Report & Ref:	To set out the Council's strategy for managing local flood risk		
		Yes/No	Comments
1.	Could the impact of the report affect one group less or more favourably than another on the basis of:		
	Age	No	.
	Disability	No	The strategy will be available in accessible formats as required.
	Gender reassignment	No	
	Marriage and civil partnership	No	
	Pregnancy and maternity	No	
	Race	No	
	Religion or belief	No	
	Sex	No	
	Sexual orientation	No	
2.	Is there any evidence that some groups are affected differently?	No	
3.	If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?	No	
4.	Is the impact of the policy/guidance likely to be negative?	No	
5.	If so can the impact be avoided?	NA	
6.	Are there alternatives that achieve the policy/guidance objectives without the impact?	NA	
7.	Can we reduce the impact by taking different action?	NA	
If you have identified a potential discriminatory impact you will need to complete a full equality impact assessment.			
8.	Is an EIA required?	No	

A large print version of this document is available on request



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