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GLOSSARY AND ACRONYMS

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Assets	Structures, or a system of structures, used to manage flood risk.
Areas Susceptible to Surface Water Flooding (AStSWF)	A method of surface water flood modelling carried out by the Environment Agency to indicate the broad areas likely to be at risk of surface water flooding. Now superseded by Risk of Flooding from Surface Water Map. See also FMfSW & RFfSW.
Catchment	An area that serves a watercourse with rainwater. Every part of land where the rainfall drains to a single watercourse is in the same catchment.
Catchment Flood Management Plan (CFMP)	A strategic planning tool through which the Environment Agency works with other key decision-makers on the large scale of a River Basin District to identify and agree overarching policies for sustainable flood risk management.
Critical Infrastructure	Infrastructure which is considered vital or indispensable to society, the economy, public health or the environment, and where the failure or destruction would have large impact. This would include emergency services such as hospitals, schools, communications, electricity sub-stations, water and waste water treatment works, transport infrastructure and reservoirs.
Defence	A structure that is used to reduce the probability of floodwater affecting a particular area, for example a raised embankment.
Defra	Department for Environment, Food and Rural Affairs. The government department with overall responsibility for flood risk management.
FRM	Flood Risk Management.
FCERM	Flood and Coastal Erosion Risk Management.
Flood	The temporary covering by water of land not normally covered with water.
Flood Map for Surface Water (FMfSW)	A method of surface water flood modelling carried out by the Environment Agency to indicate the broad areas likely to be at risk of surface water flooding, now superseded by Risk of Flooding From Surface Water Map. See also AStSWF & RFfSW.
Flood Risk Area	An area determined as having a significant risk of flooding in accordance with guidance published by Defra.
Flood and Water Management Act 2010 (FWM Act)	The Flood and Water Management Act clarifies the legislative framework for managing surface water flood risk in England.

Fluvial flooding	Flooding of main rivers.		
Floods Directive	The EU Floods Directive came into force in November 2007 and is designed to help Member States prevent and limit the impact of floods on people, property and the environment. It was transposed into English law in December 2009 by the Flood Risk Regulations.		
Groundwater	Water which is below the surface of the ground and in direct contact with the ground or subsoil.		
Hazard	A potential source of harm.		
Hydrology	The study of the effects of water on and below the earth's surface.		
Internal Drainage Board (Danvm IDB in Rotherham)	Drainage Board who are legally responsible to ensure that flows are maintained in ordinary watercourses within their domain.		
Local Development Framework (LDF)	Local Planning Authority documents which comprises of community involvement, local development scheme and the annual monitoring report.		
Lead Local Flood Authority (LLFA)	Local Authority with Flood Risk Management Functions as defined in the Flood and Water Management Act.		
Local flood risk	Flood risk from sources other than main rivers, the sea and reservoirs, principally meaning surface runoff, groundwater and ordinary watercourses.		
Main River	A watercourse shown as such on the Main River Map and for which the Environment Agency has flood risk management responsibilities and powers.		
Ordinary watercourses	A river, stream, ditch, cut, sluice, dike or non- public sewer that is not a designated Main River and for which the Lead Local Flood Authority has flood risk management responsibilities and powers.		
Pluvial flooding	Pluvial flooding (or surface runoff flooding) is caused by rainfall and is that flooding which occurs due to water ponding on, or flowing over, the surface before it reaches a drain or watercourse.		
Preliminary Flood Risk Assessment (PFRA) (Rotherham PFRA submitted to Defra December 2011)	Assessment of surface water flood risk in the area covered by a Lead Local Flood Authority describing both the probability and harmful consequences of past and predicted future flooding.		
Flood Risk Regulations	UK legislation implementing the European Floods Directive 2009.		

Resilience	The ability of the community, services, area or infrastructure to withstand the consequences of an incident.
Riparian owner	A riparian owner is someone who owns land or property adjacent to a watercourse. A riparian owner has a duty to maintain the watercourse and allow flow to pass through their land freely.
Risk	Measures the significance of a potential event in terms of likelihood and impact. Risk is the likelihood that a person may be harmed or suffers adverse health effects if exposed to a hazard.
Risk assessment	A structured and auditable process of identifying potentially significant events, assessing their likelihood and impacts, and then combining these to provide an overall assessment of risk, as a basis for further decisions and action.
Risk of Flooding From Surface Water Map (RFfSW)	A map showing results of surface water flood modelling carried out by the Environment Agency to indicate the broad areas likely to be at risk of surface water flooding. See also FMfSW & AStSWF.
River basin district	There are 11 river basin districts in England and Wales, each comprising a number of contiguous river basins or catchments.
Strategic Flood Risk Assessment (SFRA)	Documents prepared by local planning authorities assessing broad areas of flood risk to inform planning decisions.
Surface runoff	Rainwater (including snow and other precipitation) which is on the surface of the ground (whether or not it is moving), and has not entered a watercourse, drainage system or public sewer.
Surface Water Flooding	In this context, surface water flooding describes flooding from sewers, drains, groundwater, and runoff from land, small water courses and ditches that occurs as a result of heavy rainfall.
Surface Water Management Plan (SWMP)	A plan which outlines the preferred surface water management strategy in a given location.
Sustainable Drainage Systems (SuDS)	A sequence of management practices and control measures designed to mimic natural drainage processes by allowing rainfall to infiltrate and by attenuating and conveying surface water runoff slowly compared to conventional drainage.

Water Framework Directive	A European Community Directive (2000/60/EC)
(WFD)	of the European Parliament and Council
	designed to integrate the way water bodies are
	managed across Europe. It requires all inland
	and coastal waters to reach "good status" by
	2015 through a catchment-based system of
	River Basin Management Plans.

1 INTRODUCTION

1.1 Overview

In June 2008, Sir Michael Pitt published his final report, Learning Lessons from the 2007 Floods, which called for urgent and fundamental changes in the way the country is adapting to the increased risk of flooding, the need to provide consistent and co-ordinated management of flood risk, communication with communities, identification of those responsible in the local management of flood events, and adaptation to climate change. The report states that local authorities should play a major role in the management of local flood risk, taking the lead in tackling problems of local flooding and co-ordinating all relevant agencies.

The Flood Risk Regulations 2009 and Flood and Water Management Act 2010 are an important part of the Government's response to the Pitt Report. The Act is intended to create a more integrated, comprehensive and risk-based regime for managing the risk of flood and coastal erosion, including identifying clear responsibilities. In light of this, local authorities are being granted new powers and existing responsibilities for local flood risk management are being extended.

This Local Flood Risk Management Strategy has been produced by Rotherham Metropolitan Borough Council, to set out how the local flood risk within the borough will be managed. The brief for the strategy was approved by Cabinet on 19 March 2012.

The general principles of the Local Flood Risk Strategy are:

- Community focus & partnership working
- Sustainability
- o Risk Based Approach
- Proportionality
- Multiple benefits

The Strategy identifies objectives and an action plan to achieve them.

This Strategy is a living document and will be subject to amendments and additions year on year.

1.2 Sources of Flooding

This Strategy considers local flood risk, namely the following sources of flooding:

Surface water runoff – rainwater (including snow and other precipitation), which is on the surface of the ground (whether or not it is moving), and has not entered a watercourse, drainage system or public sewer. Flooding from surface runoff is sometimes called pluvial flooding. Note that the term 'surface water' is used generically to refer to water on the surface.

Ordinary watercourse – any river, stream, ditch, cut, sluice, dike, culvert which is not a main river.

Artificial water bearing infrastructure – includes reservoirs (see below), sewers, water supply systems and canals. The strategy does not assess flooding from sewers, unless wholly or partly caused by rainwater or other precipitation entering or otherwise affecting the system. Floods of raw sewage caused solely, for example, by a sewer blockage do not fall under the Regulations. The Regulations also do not apply to floods from water supply systems, e.g. burst water mains.

Groundwater – water which is below the surface of the ground and in direct contact with the ground or subsoil. It is most likely to occur in areas underlain by permeable rocks, called aquifers. Within Rotherham, deep flows within aquifers do not generally cause flooding. Whilst flow of groundwater underground at shallow depths may contribute to localised flooding where it emerges as springs or issues, the flow closely mirrors surface flows and is not related to a widespread rise in groundwater levels. Groundwater flooding has therefore not been addressed separately to surface water flooding in this strategy.

This Strategy does not consider the following sources of flooding, except where there is an interaction with surface water flooding for example where high water levels within river impede the discharge from an ordinary watercourse:

Main river – watercourses legally defined and marked as such on the main rivers map. Generally they are larger streams or rivers, but can be smaller watercourses. The Environment Agency has flood risk management responsibility for them.

Large reservoirs – Under the Reservoirs Act 1975, the Environment Agency are responsible for regulating large raised reservoirs with a capacity exceeding 25,000 m³. This may reduce to10,000 m³ by the commencement of provisions of the Flood and Water Management Act 2010. It is possible that this Strategy will require updating to include the amendments to reservoirs in the Act.

1.3 Introduction to the Area

The Borough of Rotherham is situated in South Yorkshire and covers an area of 286km² and has a population of approximately 253,900 (2009 census). Rotherham is generally underlain by the middle coal measures with predominantly impermeable soils and underlying strata. Consequently, the hydrology of the area is dominated by surface or shallow depth flows.

The north-west and central areas of the Borough drain to the river Don, which runs from Sheffield, through Rotherham town centre, where it is joined by the River Rother, then to the north east where it is joined by the River Dearne near the Boundary with Doncaster, and are within the Rotherham sub-area of the Don Catchment in the Humber river basin district.

The south east third of the Borough drains towards the River Ryton, is hydrologically independent of the Don catchment and is within the Sherwood sub-area of the River

Trent Catchment Flood Management Plan in the Humber river basin district. The boundaries between two water companies and Environment Agency (EA) regions reflect these catchment boundaries, the south east being Severn Trent Water Ltd and EA Midlands region, the remainder being Yorkshire Water Services Ltd and EA Yorkshire & North East region.

The rivers classed as "main river" are shown on Figure 1 below.

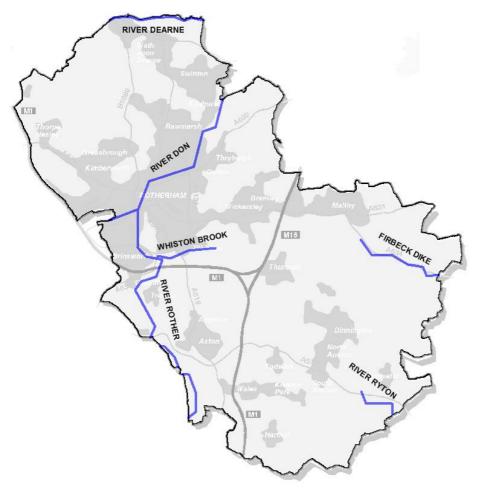


Figure 1 - Main Rivers

2.0 LEGISLATIVE CONTEXT

The EU Floods Directive, was passed as a result of widespread flooding in Europe, and has been transposed into UK law by the Flood Risk Regulations 2009.

In June 2008, Sir Michael Pitt published his final report, Learning Lessons from the 2007 Floods, which recognised that there were significant gaps in the powers held by various bodies in trying to reduce and respond to the risk of flooding and called for urgent and fundamental changes in the way the country is adapting to the increased risk. The report includes 92 recommendations, of which 21 are specifically designated to local authorities.

The Governments response to the Pitt Review included the Flood and Water Management Act 2010, which puts in place many of the changes recommended by Sir Michael Pitt. Lead Local Flood Authorities (LLFAs) have been designated and have taken on new powers and duties extending their organisation's previous responsibilities for flood risk management and will therefore need to take resource and organisational decisions to deliver the new legislative requirements.

The Water Framework Directive (WFD) 2000 is European legislation with the primary aim of improving water quality. The Directive requires the creation of river basin management plans and flood risk management plans.

3.0 LINKS TO OTHER STRATEGIES

This strategy must be consistent with national and regional strategies, the most important of which are listed below.

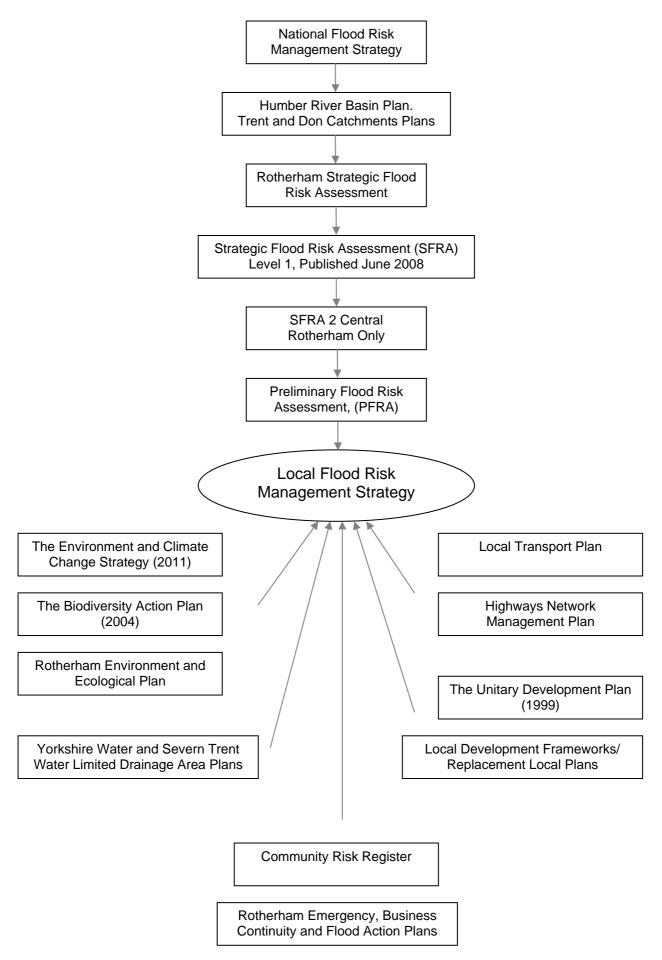


Figure 2 - Links Between National, Regional And Local Strategies And Plans

3.1 National Plans

National Flood and Coastal Erosion Risk Management Strategy for England

In accordance with the Flood and Water Management Act 2010 this strategy builds on existing approaches to flood and coastal risk management and promotes the use of a wide range of measures to manage risk.

The strategy encourages more effective risk management by enabling people, communities, business, infrastructure operators and the public sector to work together to:

- Ensure a clear understanding of the risks of flooding and coastal erosion, nationally and locally, so that investment in risk management can be prioritised more effectively;
- Set out clear and consistent plans for risk management so that communities and businesses can make informed decisions about the management of the remaining risk;
- Manage flood and coastal erosion risks in an appropriate way, taking account of the needs of communities and the environment;
- Ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond effectively to flood forecasts, warnings and advice:
- Help communities to recover more quickly and effectively after incidents.

The strategy shows how communities can be more involved in local flood and coastal erosion risk management. It also emphasises the need to balance national and local activities and funding. In setting out future approaches to flood risk management, this strategy considers the level of risk and how it might change in the future, the risk management measures that may be used, roles and responsibilities, future funding and the need for supporting information.

3.2 Regional Plans

River Basin Management Plans (2000)

Rotherham is located in the Humber River Basin District The EU Water Framework Directive (WFD) is the driving legislation for the River Basin Management Plans.

Catchment Plans

The regional catchment level plans define 6 policy options for managing flood risk in sub catchments, the higher the policy number, the more intensive the proposed flood risk management action.

- **Policy 1** Areas of little or no flood risk where we will continue to monitor and advise.
- **Policy 2** Areas of low to moderate flood risk where we can generally reduce existing flood risk management actions.
- **Policy 3** Areas of low to moderate flood risk where we are generally managing existing flood risk effectively.
- **Policy 4** Areas of low, moderate or high flood risk where we are already managing the flood risk effectively but where we may need to take further actions to keep pace with climate change.
- **Policy 5** Areas of moderate to high flood risk where we can generally take further action to reduce flood risk.
- **Policy 6** Areas of low to moderate flood risk where we will take action with others to store water or manage run-off in locations that provide overall flood risk reduction or environmental benefits.

The south east third of the Rotherham lies in the Sherwood sub-area of the River Trent Catchment Flood Management Plan, is designated as Policy 3, and has no specific actions within the Rotherham Boundary.

The remainder of Rotherham lies in the Rotherham sub-area of the Don Catchment Flood Management Plan, and is designated as Policy 5. Specific objectives for this area are:

- Identify the long term implications of the changing flood regime (due to FCRM works), including the implications of climate change, on Centenary Wetland Reserve and Rother Valley Country Park to ensure that the condition of these sites is maintained, and where possible improved.
- Where possible, opportunities should be sought to enhance the river corridor habitats, landscape, access and amenity facilities to support the local planning policy drive to develop green infrastructure and increase access to the riversides.
- Work in partnership with the Lead Local Flood Authority to reduce the risk of flooding from surface water.
- Incorporating policies and recommendations within Rotherham MBC LDF, through the development of a water management and flood resilient design Supplementary Planning Document (SPD);
- Significantly improve flood awareness throughout the sub-area using approaches such as Flood Action Groups (FAG); development of a Local Flood Website; focused flood warning and awareness campaign carried out in partnership.

- Determine in greater detail the risk of flooding to utilities, i.e. gas, electricity, water and telecommunications installations and the consequences of the loss of these installations during flooding.
- Work in partnership to identify potential blockages to high flows and determine the feasibility of removal or adaptation, for example Don Bridge.
- Following the completion of the 'River Rother and Dearne Regulator
 Assessment', ensure that this detailed scientific evidence is used to determine
 the long term approach to managing flood risk within the Rotherham policy unit.
- Continue to monitor the condition of structure integrity of all lakes and dams i.e.
 Ulley Reservoir, to ensure the potential for failure is reduced.
- Produce a multi agency approach to registering culverts and outfalls. This should enable the location, capacity and condition of assets to be recorded and fed into their long term management.

3.3 Rotherham Local Plans – (Flood related)

Strategic Flood Risk Assessment (SFRA) Level 1, Published June 2008

The level 1 Rotherham SFRA was carried out primarily to inform planning policy. It is a high level policy document which delineates areas into high, medium and low flood risk.

Strategic Flood Risk Assessment Level 2 - Central Rotherham Only

This particular Strategic Flood Risk Assessment is one of three documents produced by Jacobs consultants in December 2010. It provides a flood risk toolkit for the Rotherham Regeneration and Flood Alleviation Area.

Preliminary Flood Risk Assessment, (PFRA)

The Flood Risk Regulations 2009 implement the requirements of the European Floods Directive. The regulations impose new duties on Lead Local Flood Authorities including responsibility for managing local flood risk in particular from ordinary watercourses, surface runoff and groundwater.

The PFRA is a high level exercise based on existing and available information.

- Over 8,500 residential properties in Rotherham have been identified as potentially at risk from surface water flooding, compared with less than 300 at risk of flooding from rivers.
- 106 areas have been identified for prioritisation in subsequent flood risk management planning, bullet points 3&4 above.
- The unaltered Flood Map for Surface Water produced by the Environment Agency was used to define Locally Agreed Surface Water Information.
- This document does not consider flooding from main rivers, reservoirs or as a consequence of sewer blockages.

Rotherham MBC Final PFRA was submitted to Defra in December 2011.

3.4 Rotherham Local Plans – (non flood related)

Rotherham's Environment and Climate Change Strategy and Action Plan 2011 – 2015 (Revised 2013)

The purpose of this Strategy is to explain how Rotherham MBC will reduce our environmental impact; reduce its contribution to climate change and adapt to future changes resulting from climate change. The strategy will contribute to national climate change objectives including:

- Reducing greenhouse gas emissions by 80% by 2050 against a 1990 baseline.
- Reducing fuel poverty and improve energy efficiency through the Government Energy Company Obligation and Green Deal.
- Generating 15% of the UK's energy consumption from renewable energy by 2020.

Climate change is set to be an issue that will dominate the 21st century because of its economic, social and environmental implications. Although an international issue, many of the effects will be felt, and ultimately will need to be managed, on a local scale.

The Unitary Development Plan (1999) is RMBC's response to FCERM *Policy UTL1 Safeguarding Utility Infrastructure* "In granting planning permission, the Council, in consultation with the utility companies, will require that development proposals take into account any existing and new service infrastructure requirements, such as major pipelines, transmission lines, telecommunications networks, distribution mains, sewers, sewage treatment works, land drainage systems, flood defences, scheduled washlands and surface and groundwater resources, together with associated apparatus, installations and operational land and the need for access for maintenance and repair purposes." (RMBC *The Unitary Development Plan 1999*).

Rotherham's Local Plan (Completion 2013) will eventually replace the *Unitary Development Plan*.

Rotherham's Unitary Development Plan (UDP) was formally adopted by the Council in June 1999. The plan guides development throughout the borough covering such issues as housing, employment, transport, conservation and the protection of the environment. The UDP will eventually be replaced by the Local Plan.

Rotherham's Local Plan (2013)

The Local Plan (previously called the Local Development Framework or LDF) will provide a long-term development strategy for Rotherham, setting out policies and proposals for new housing, shopping and employment, and how you travel throughout the borough.

The Local Plan will eventually replace the existing Unitary Development Plan and will help to streamline the local planning process and promote a proactive and positive approach to managing development. It will help the Council decide on planning applications and promote Rotherham's continued regeneration whilst protecting and enhancing the natural environment. The current programme for producing the Local Plan is set out in our Local Development Scheme.

The Biodiversity Action Plan 2004

This Local Biodiversity Action Plan identifies a programme of activities to ensure the protection and enhancement of Rotherham's important biodiversity. It is the result of the work of Rotherham's Biodiversity Forum, a partnership of naturalists, landowners, conservationists and RMBC staff and identifies the conservation priorities for Rotherham.

- o Part One sets the scene of biodiversity conservation in the UK and locally.
- Part Two describes in detail the identification of local priorities.
- Part Three contains the Habitat and Species Action Plans that identify threats and opportunities facing some of our most important biodiversity and sets out work programmes to halt their decline.

Rotherham Emergency Plan, Multi-Agency Flood Plan and Flood Action Plans The Council's Emergency Plans are published on the Council's intranet. The Plans consist of a corporate Borough Emergency Plan and various Service Emergency Plans. The Environment and Development Services Emergency Plan has Flood Action Plans which identify areas at high risk of flooding such as Catcliffe.

The Plans are living documents and are amended and updated regularly.

Community Risk Register

The Community Risk Register is published by South Yorkshire Local Resilience Forum in compliance with the Civil Contingencies Act 2004 and the Civil Contingencies Act 2004 (Contingency Planning) Regulations 2005. It is updated annually.

The purpose of the Register is to identify possible hazards which could impact on the communities of South Yorkshire, to assess the likelihood of each of these hazards occurring, and to thereby inform contingency planning arrangements within South Yorkshire.

Yorkshire Water and Severn Trent Water Drainage Area Plans

The Water Companies have a statutory duty to maintain and manage public sewers and maintain a register of properties at risk from hydraulic overloading in the public sewerage systems.

The Water Companies have a duty to assist LLFA in sharing of information and data and have an understanding of flood risk from the public sewerage systems.

Local Transport Plan (LTP)

The LTP is a South Yorkshire-wide plan which covers both the infrastructure (see HAMP below), and the use of the network, transportation planning etc.

Highways Asset Management Plan (HAMP)

The HAMP sets out how the highways infrastructure is managed within Rotherham. Highways assets may be receptors at risk of flooding, or drainage assets such as culverts and highway drains which must be maintained to manage flood risk.

4.0 ASSESSMENT OF LOCAL FLOOD RISK

4.1 Past flood events

Rotherham has experienced 3 flooding events of major local significance since 2000, the nationally significant flood event in June 2007 and by more localised events in November 2000 and June 2009.

Recent flooding incidents are generally well reported and documented. Records of older floods do exist in some cases, but are incomplete and difficult to verify. The easily accessible records have been extracted and mapped. As further historical information becomes available, the flooding records will be updated.

A desk study of historical flooding confirms that there have been many significant floods on the Don and Rother for hundreds of years, including before the catchment was significantly developed. The development of the catchment and changes to the watercourses and sewers mean that the older historical information is not useful for assessment of current flood risk.

4.2 Environment Agency Surface Water Flood Risk Modelling

Surface water flood modelling has been carried out by the Environment Agency to indicate the broad areas likely to be at risk of surface water flooding. However, the **Environment Agency surface water flood maps are not suitable for identifying whether an individual property will flood.** This is because information on floor levels, construction characteristics or designs of properties is not considered.

The modelling was carried out by applying rainfall to a digital terrain model and this was done using 3 different methodologies, namely Flood Map for Surface Water (FMfSW), Areas Susceptible to Surface Water Flooding (AStSWF) and Risk of Flooding from Surface Water (RFfSW). FMfSW and AStSWF were carried out before the draft LFRMS was produced and were used to identify areas at risk and in particular the 106 areas in Rotherham prioritised for further investigation. During the consultation period, the RFfSW information became available. This is considered superior to both previous methodologies and supersedes both. The 106 areas have therefore been reprioritised using the updated modelling and environmental information.

Drawing 187/46/DR002A in Appendix B shows the 106 areas and the revised rankings.

Maps showing flood risk, including surface water risk, are available on the Environment Agency website.

_	River Flooding	Surface Water (RFfSW)
Dwellings at risk	273	2321

Table 2 - Comparison between river flooding and surface water flooding

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The above figures show that the threat to residential properties numerically is overwhelmingly from surface water flooding. Non residential flooding affecting industry and infrastructure is more at risk from river flooding due to its geographical concentration along river corridors. See drawing 187/46/DR001A in Appendix B for a comparison of the areas at risk from the two types of flooding.

5.0 GOVERNANCE AND PARTNERSHIP ARRANGEMENTS

An organogram of governance and partnership arrangements is provided in Figure 3 below.

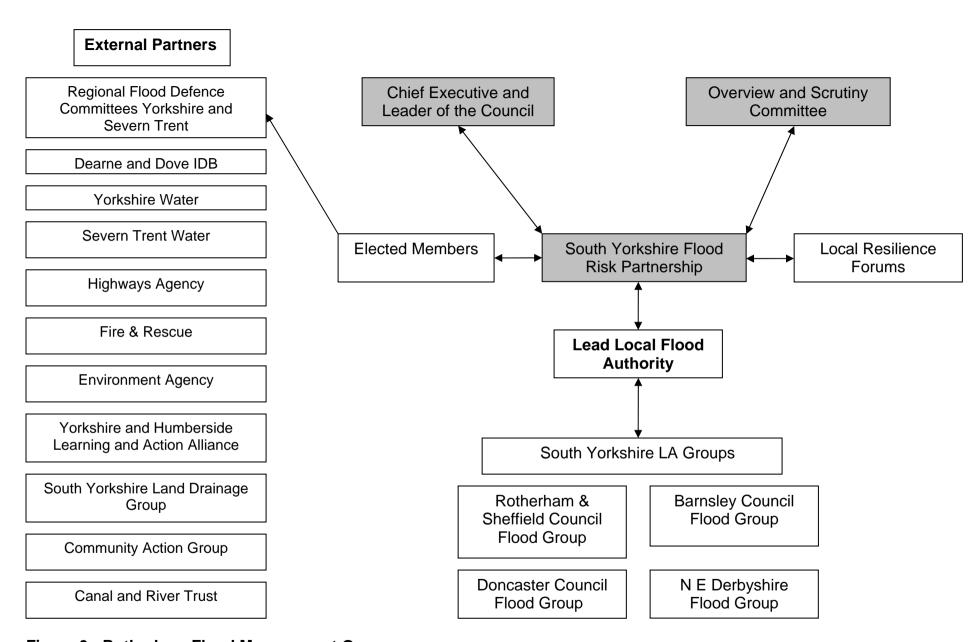


Figure 3 - Rotherham Flood Management Governance

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6.0 FLOOD RISK MANAGEMENT AUTHORITIES

6.1 Definition

The Flood and Water Management Act 2010 defines certain organisations as "Risk Management Authorities" (RMA). In Rotherham, these are:

- Lead Local Flood Authority Rotherham MBC
- o The Environment Agency Yorkshire & Northeast Region and Midlands Region
- An Internal Drainage Board Danvm are in Rotherham this is only applicable to Hound Hill Dike and part of Brook Dike in Wath-Upon-Dearne.
- o A Water Company Yorkshire Water Services Ltd and Severn Trent Water Ltd
- A Highway Authority Rotherham MBC & Highways Agency

All Risk Management Authorities have the following new responsibilities under the provisions of the Act.

- A duty to cooperate with and provide information to other risk management authorities
- Ability to take on flood and coastal erosion functions from another risk management authority when agreed by both sides

Risk Management Authorities are required to act in a manner consistent with the national flood and coastal erosion risk management strategy. These risk management authorities must also, with the exception of water companies, act consistently with relevant local flood risk management strategies in carrying out their flood risk management functions.

Individual Risk Management Authorities have the following specific responsibilities, duties and powers:

A duty is something the RMA is legally obliged to do; a power can be used at the RMA's discretion.

6.2 Lead Local Flood Authority – Rotherham MBC

- Duty to produce a local flood risk management strategy develop, maintain, apply, monitor and publish a local strategy. The strategy will provide a framework to deliver a prioritised programme of works and initiatives to manage flood risk in the area.
- Strategic leadership of local risk management authorities. It is recommended that this is done through the formation of a local flood

partnership between lead local flood authorities and other risk management authorities

- Duty to co-operate with other risk management authorities –arrangements have been in place for a number of years via South Yorkshire Land Drainage Group, Yorkshire and Humber Learning and Action Alliance and the more recent South Yorkshire Flood Risk Management Partnership where partners can share best practice and develop joint initiatives.
- Duty to exercise flood risk management functions in a manner consistent with the national strategy
- Power to do works to manage flood risk from surface runoff or groundwater
- Power to arrange for a flood risk management function to be transferred to another risk management authority – It is not currently anticipated that any functions will be transferred.
- Power to request information in connection with its flood management functions from another person – reciprocal arrangements are in place with the Council's principal partners, other Risk Management Authorities, and organisations such as Environment Agency, Network Rail and the Canals and Rivers Trust, to exchange relevant information. The Council will continue to expand its knowledge base by requesting relevant information from other key agencies and landowners.
- Duty to investigate flooding the LLFA will act as the co-ordinator for the investigation of flood incidents, determining responsibility for any further action from risk management authorities. The LLFA has local discretion to determine which flood incidents it investigates. The draft investigations policy will be attached as an appendix. The results of any investigation will be published on the Councils website and any relevant risk management authorities informed of the results.

Whilst the principal purpose of formal flood investigation is to identify cause and responsibility for further action and provide a single point of contact for the householder, business or community, the information gathered will be invaluable in extending the Council's knowledge of drainage infrastructure and local flood risk.

Outy to maintain a register of drainage assets / features – the Council must establish and maintain a register of structures or features which it considers are likely to have a significant effect on local flood risk. Information on ownership and state of repair will also be held on the register. The register will be available for inspection. The LLFA has discretion to set a local indication of "significance" to determine which assets it records on the register.

The register will be available on the Council's website and will allow local residents, communities and businesses to better understand where the significant drainage and flood management features are located.

Power to designate features that affect flood risk – if the LLFA considers a structure or feature affects a flood risk and it is not owned by the LLFA or the Environment Agency, it may formally "designate" the structure/feature. Designation places legal responsibilities on the owner of the asset to manage it with due regard to its function as a flood risk feature. The owner may not alter, remove or replace a designated structure or feature without the consent of the LLFA. The act does allow the owner of the asset right of an appeal should it be considered unnecessary, unreasonable or without justification.

Structures or features meriting designation could include culverts, garden/building walls, flood banks etc where there is evidence that their location affects flood risk.

The Council intends to use the powers in a proportionate manner, determining an appropriate measure of significance for the flood risk. Any proposal to designate a structure or feature will be fully evidenced and justified. A policy for designation is included in Appendix C.

- O Power to formally consent works within Ordinary Watercourses the FWM Act transfers legal powers from the Environment Agency to the Council to manage works proposed in ordinary watercourses. The Environment Agency will continue to consent works in designated main rivers and the Council will consent those works in all other (Ordinary) watercourses. Works which may need approval by the Council include new and replacement culverting, provision and removal of weir structures, construction of river walls and temporary support works for permanent structures which interfere with the flow of water in the watercourse. The Council will actively manage works proposed by riparian owners to ensure that flood risk does not increase as a result of their actions.
- Outy to promote and manage Sustainable Drainage the FWM Act creates a responsibility for the Council to approve, adopt and maintain all newly constructed SuDS which serve more than one property. There are currently some uncertainties as to how and when this duty will be delivered but the principle of SuDS being the drainage solution of first resort, owned and maintained by the Council, has been widely accepted. The Council, as the SuDS Approving Body (SAB), will have significant influence as to how surface water is managed on new development sites. There are great opportunities to remove the burden on currently over-loaded drainage systems through the development of more natural systems of water management.
- Duty to aim to contribute towards the achievement of sustainable development in the exercise of flood risk management functions and to have regard to any Ministerial guidance on this topic

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6.3 The Environment Agency

- Strategic overview for all forms of flooding
- Development of a National Strategy for Flood and Coastal Erosion Risk Management (FCERM) to cover all forms of flooding
- The conversion of Regional Flood Defence Committees into Regional Flood and Coastal Committees with a new remit to include coastal erosion issues
- Powers to request information from any person in connection with the Environment Agency's flood and coastal erosion risk management functions
- Power to designate structures and features that affect flooding or coastal erosion
- Powers to cause flooding and erosion for nature conservation and cultural heritage reasons, and people's enjoyment of these
- A duty to have regard to FCERM in carrying out other work that may affect FCERM
- A duty to have regard to Local Flood Risk Management Strategies
- A duty to report to Ministers about flood and coastal erosion risk management including application of the national strategies for England and Wales. This report covers all sources of flood risk and where applicable its management by all relevant Risk Management Authorities
- Statutory consultees to the SuDS Approving Body on sustainable drainage that impacts water quality or strategic flood risk
- Continuing roles and responsibilities contained within the Act include:
- Responsibility for coastal flooding
- Responsibility for fluvial flooding from main rivers
- Duty to contribute to sustainable development in discharging their FCERM functions
- Ability to issue levies to lead local flood authorities for an area
- Updated provisions for the regulation of reservoirs.

6.4 Water Companies – Yorkshire Water Services Ltd and Severn Trent Water Ltd

- Duty to act consistently with the national strategies and to have regard to local strategies when carrying out their flood risk management functions
- Duty to be subject to scrutiny from lead local flood authorities' democratic processes in respect of their flood risk management functions
- Adoption of private sewers and pumping stations

6.5 Internal Drainage Boards (IDBs)

Danvm (formerly Dearne and Dove) IDB, (covers part of Wath Upon Dearne only)

- Power to designate structures and features that affect flooding or coastal erosion
- Powers to cause flooding and erosion for nature conservation and cultural heritage reasons, and people's enjoyment of these
- Duty to exercise their functions in a manner consistent with local and national strategies
- Duty to be subject to scrutiny from lead local flood authorities' democratic processes
- Ability to work in consortia with other IDBs
- Statutory consultees to the SuDS approving body on sustainable drainage that impacts land drainage

6.6 Highway Authority - Rotherham MBC & Highways Agency

Duty to maintain the public highway network (excluding motorways) – the Highways Act requires the Council, as Highway Authority, to ensure that highways are drained of surface water and, where necessary, maintain all drainage systems. In particular, the Council carries out regular maintenance of road gullies and their connections to the carrier drains. The carrier drain will generally be an adopted public sewer, maintainable by the local water company but, in some instances, it may be a dedicated highway drain also maintainable by the Council. Culverts, carrying watercourses, crossing public highways may have trash grilles installed at the upstream end of the culvert, protecting the culvert from blockages. The highway authority has a responsibility to ensure these grilles operate efficiently, achieved by clearing them on a regular maintenance cycle.

- Highways Agency has the same duties and responsibilities for motorways and trunk roads, which in Rotherham are the M1 and the M18 only.
- Duty to adopt and maintain SuDS draining new roads The SuDS Regulations require Highway Authorities to adopt SuDS which drain a newly constructed road.

6.7 Other Powers and Duties of Rotherham MBC

The Flood and Water Management Act 2010 identified Rotherham MBC as the Lead Local Flood Authority for the Borough. The main responsibilities from the Act have been summarised in the previous section but the main effect of the Act will be to provide, for the first time, the means for the Council to coordinate and manage local flood risk.

The Council also has a number of duties, powers and responsibilities from other legislation which assist the Council in providing a comprehensive approach to the management of local flood risk as follows:

6.8 As a Category 1 Responder (Emergency Planning)

- Duty to assess risk of emergencies occurring and use this to inform contingency planning
- Duty to put in place emergency plans
- Duty to put in place Business Continuity Management arrangements
- Duty to put in place arrangements to make information available to the public about civil protection matters and maintain arrangements to warn, inform and advise the public in the event of an emergency
- o Duty to share information with other local responders to enhance co-ordination
- Duty to Co-operate with other local responders to enhance co-ordination and efficiency
- Duty to provide advice and assistance to businesses and voluntary organisations about business continuity management (Local Authorities only)

6.9 As Planning Authority

 Responsibility to consider flood risk in Local Plans – the Planning Authority must prepare, publish and use a Local Development Framework (LDF) which directs how land can be used. The LDF considers flood risk from both fluvial (main river) and local sources (surface water) of flooding, paying due regard to

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- available Strategic Flood Risk Assessments, Preliminary Flood Risk Assessments and Surface Water Management Plans.
- Responsibility to consider flood risk when assessing applications for development – The Planning Authority should only approve development where it can be demonstrated that the proposal doesn't increase the overall risk of flooding in the area and is adequately protected from flooding itself. A sequential approach should be taken to ensure development sites are chosen which offer the lowest possible flood risk.
- Working with the SAB (See below) The Planning Authority should highlight at the Master Planning stage or during any early pre-planning enquiries the need to discuss drainage and flood management requirements with the SAB.

6.10 As Sustainable Drainage Systems Approving Body (SAB)

- Duty to establish a SuDS Approving Body (SAB) The Council as LLFA has
 to establish an approving body for new surface water drainage systems in its
 area.
- Duty to receive applications for, and approve all construction work which has drainage implications – The SAB will receive all applications for construction where there are drainage implications, assess their compliance with any national and/or local standards and approve or decline the application as appropriate.
- Duty to adopt SuDS which serve more than one property The SAB will adopt all surface water drainage systems constructed in accordance with the SuDS Regulations where they drain more than one property. SuDS draining public roads will be adopted by the Highway Authority
- Duty to maintain adopted SuDS The SAB must maintain all adoptable SuDS in accordance with the national standards for sustainable drainage.

6.11 As a Riparian Owner

- Duty to pass on flow in a watercourse without obstruction, pollution or diversion affecting the rights of others – The Council, as a landowner, has a duty to pass on the flow in a natural watercourse from its land to another
- Duty to accept flow The Council has a responsibility to accept normal flow onto its land and even flood flow which may be caused by under-capacity downstream. There is no duty for a landowner to increase the capacity of a watercourse crossing his land
- Duty to maintain the bed and banks of the watercourse The Council must clear obstructions in the watercourse which affect the flow of water in the

channel, including vegetation, artificial obstructions and heavy siltation. The Council is responsible for protecting its own property from natural seepage through natural river and flood banks. There is also a duty to control alien invasive species, such as Japanese Knotweed and Himalayan Balsam.

6.12 Other Partners

Other partners who are not designated RMAs but may contribute to flood risk management include:

Rotherham MBC

- o Emergency Planning Unit
- Strategic/Forward Planning
- Property Services
- Bridges and Structures
- Highways Development Control
- Leisure and Community Services
- o Transportation
- Public Rights of Way
- Car parks
- Information Services
- o Communications, community engagement and public relations
- Sustainability and climate change teams
- Environmental services

External

- Highways Agency
- Network Rail
- Emergency services
- o Parish and Town Councils
- Housing Associations
- Local Resilience Forum
- Canal and Rivers Trust (formerly British Waterways)
- Natural England
- o English Heritage
- o Met Office
- Local partnerships, forums and community groups
- Association of British Insurers
- o Wildlife Trusts
- Royal Society for the Protection of Birds
- Association of Drainage Authorities
- National Flood Forum
- Land and Business Associations
- National Farmers Union
- o Professional Institutions
- Land owners and land/estate managers

7.0 OBJECTIVES OF THE STRATEGY

Objective 1 Improve the level of understanding of local flood risk within the LLFA **Objective 2** Improve the level of understanding of local flood risk amongst Risk Management Authorities and other partners, stakeholders and communities. **Objective 3** Formalise arrangements between Risk Management Authorities **Objective 4** Formalise Policies and Procedures for new responsibilities at set out in the Flood Risk Regulations (2009) and Flood and Water Management Act (2010). **Objective 5** Create Asset Record and Register to record drainage infrastructure and FRM assets **Objective 6** Improve management of Council owned drainage and flood management assets **Objective 7** Encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets **Objective 8** Co-ordinate Flood Risk Management and Planning functions to reduce flood risk to existing and proposed developments. **Objective 9** Take a sustainable approach to FRM, balancing economic, environmental and social benefits from policies and programmes, including a Strategic Environmental Assessment **Objective 10** Identify and promote schemes to reduce flood risk which are viable considering practicality, cost benefit and funding potential. **Objective 11** Identify potential sources of funding. **Objective 12** Co-ordinate Flood Risk Management and Emergency Planning procedures **Objective 13** Take into account equalities by carrying out an Equality Impact Assessment **Objective 14** Promote buy-in by stakeholders by consulting during Strategy preparation and on completed Strategy **Objective 15** Secure commitment from all Flood Risk Management Authorities to act in accordance with the Strategy by official acceptance by the relevant Boards, Committees, Scrutiny etc.

8.0 ACTION PLAN

The SWMP provides a methodology to identify the most appropriate measures to use in locations identified as being at risk of flooding. Measures can be "structural" such as planning controls and improved community engagement, or "non-structural" such as physical improvement or maintenance works. It is impractical and unaffordable to carry out every measure for every situation. The Strategy will help to determine which measures are most appropriate for individual areas, which measures offer best value for money and how a blend of structural and non-structural measures can be used to give a balanced approach to mitigating risk.

A detailed action plan which addresses the objectives of the Strategy as detailed in item 7 above is contained in Appendix A.

9.0 FLOOD RISK MANAGEMENT FUNDING

Source of Funding	Description	Indicative budget in 2012/13	Administered By	Appropriate For
Flood Defence Grant-in-Aid (FDGiA)	Central government funding for flood (and coastal) defence projects – recently revised to encourage a partnership approach to maximise match-funding, work towards achieving specified outcomes with a requirement to evidence a reduction in flood risk to properties	£30million (Yorkshire)	Environment Agency	Medium to large capital FRM projects
Local Levy	Annual contributions from Councils to a regional "pot", smaller than the FDGiA budget but offers more flexibility on the type and size of project it can fund.	£2million (Yorkshire)	Environment Agency	Smaller FRM projects or as a contribution to FDGiA projects
Private Contributions	Voluntary, but funding from beneficiaries of projects could make contributions from national funding viable. Contributions could be financial or "in kind" e.g. land, volunteer labour	Unknown	RMBC	All projects
Water Company Investment	Investment priorities heavily regulated by Ofwat but opportunities for contributions to area-wide projects which help to address sewer under-capacity problems	Unknown	Water Company	Areas with a history of sewer flooding. Projects which help to remove surface water from combined sewers
Section 106 contributions (Town & Country Planning Act)	Contributions from developers, linked to specific development sites where off-site improvements to drainage infrastructure are required to make the developers proposals acceptable	Unknown	RMBC	Larger development sites
Community Infrastructure Levy (CIL)	A local levy applied by the Planning Authority on developers to contribute to a general infrastructure fund. Rotherham Council has not yet implemented a CIL scheme. A bid for CIL would have to be made for flood management/drainage improvements against other competing council priorities.	Unknown	RMBC	Areas where there is a large amount of development being carried out by several parties.

SAB Income	Application and inspection fees from developers in support of the approval, inspection and maintenance of new development related SuDS.	Unknown - Awaiting Defra decision of how funding will be provided. Possible risk for Council.	RMBC	Inspection, adoption and maintenance of SuDS.
Council Capital Funding	The Councils infrastructure programme prioritising capital improvement projects. In recent years the programme has included funding for several flood alleviation schemes but future funding is uncertain.	£Nil Presently only emergency works are considered.	RMBC	Measures which are small to medium capital projects
Council Revenue Funding	The Council currently funds maintenance of existing assets via the revenue budgets of the departments where liability falls, including Streetpride, Neighbourhoods, Resources. Defra funding of £156.3k per annum has been provided to finance the execution of the Council's new duties. Funding at this level is expected to continue until 2015. Funding for financial year 2015/16 and beyond will be subject to government spending review.	Highway Drainage & Land Drainage Maintenance (£143k) Gully cleansing (£159k) Waste Disposal (£48k) Flood Management Team (£156k)	RMBC	Measures requiring officer time and/or maintenance activity

Table 3 - Potential Sources Of Funding

10.0 THE POTENTIAL IMPACTS OF CLIMATE CHANGE

10.1 Effects of Climate Change

The Environment Agency commissioned work to consider the varying impacts of climate change on sources of local flood risk for each River Basin District across England and Wales.

10.2 The Evidence

There is clear scientific evidence that global climate change is happening now. It cannot be ignored. Over the past century around the UK we have seen sea level rise and more of our winter rain falling in intense wet spells. Seasonal rainfall is highly variable. It seems to have decreased in summer and increased in winter, although winter amounts changed little in the last 50 years. Some of the changes might reflect natural variation, however the broad trends are in line with projections from climate models.

Greenhouse gas (GHG) levels in the atmosphere are likely to cause higher winter rainfall in future. Past GHG emissions mean some climate change is inevitable in the next 20-30 years. Lower emissions could reduce the amount of climate change further into the future, but changes are still projected at least as far ahead as the 2080s.

We have enough confidence in large scale climate models to say that we must plan for change. There is more uncertainty at a local scale but model results can still help us plan to adapt. For example we understand rain storms may become more intense, even if we can't be sure about exactly where or when. By the 2080s, the latest UK climate projections (UKCP09) are that there could be around three times as many days in winter with heavy rainfall (defined as more than 25mm in a day). It is plausible that the amount of rain in extreme storms (with a 1 in 5 annual chance or rarer) could increase locally by 40%.

10.3 Key Projections for Humber River Basin District

If emissions follow a medium future scenario, UKCP09 projected changes by the 2050s relative to the recent past are:

- Winter precipitation increases of around 12% (very likely to be between 2 and 26%)
- Precipitation on the wettest day in winter up by around 12% (very unlikely to be more than 24%)
- Peak river flows in a typical catchment likely to increase between 8 and 14%

10.4 Implications for Flood Risk

Climate changes can affect local flood risk in several ways. Impacts will depend on local conditions and vulnerability. Wetter winters and more of this rain falling in wet spells may increase river flooding. More intense rainfall causes more surface runoff, increasing localised flooding and erosion. In turn, this may increase pressure on drains, sewers and water quality. Storm intensity in summer could increase even in drier summers, so we need to be prepared for the unexpected.

Drainage systems in the district have been modified to manage water levels and could help in adapting locally to some impacts of future climate on flooding, but may also need to be managed differently. Rising river levels may also increase local flood risk away from major rivers because of interactions with drains, sewers and smaller watercourses. Where appropriate, we need local studies to understand climate impacts in detail, including effects from other factors like land use. Sustainable development and drainage will help us adapt to climate change and manage the risk of damaging floods in future.

10.5 Adapting to Change

Past emission means some climate change is inevitable. It is essential we respond by planning ahead. We can prepare by understanding our current and future vulnerability to flooding, developing plans for increased resilience and building the capacity to adapt. Regular review and adherence to these plans is key to achieving long-term, sustainable benefits. Although the broad climate change picture is clear, we have to make local decisions based on a degree of uncertainty. We will therefore consider a range of measures and retain flexibility to adapt. This approach, embodied within flood risk appraisal guidance, will help to ensure that we do not increase our vulnerability to flooding.

10.6 Long Term Developments

It is possible that long term developments might affect the occurrence and significance of flooding. However current planning policy aims to prevent new development from increasing flood risk.

In England, National Planning Policy Framework (NPPF) aims to "ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk. Where new development is, exceptionally, necessary in such areas, policy aims to make it safe without increasing flood risk elsewhere and where possible, reducing flood risk overall."

Adherence to Government policy ensures that new development does not increase local flood risk. However, in exceptional circumstances the Local Planning Authority may accept that flood risk can be increased contrary to Government policy, usually because of the wider benefits of a new or proposed major development. Any exceptions would not be expected to increase risk to levels which are "significant" (in terms of the Government's criteria).

11.0 ENVIRONMENTAL OBJECTIVES AND STRATEGIC ENVIRONMENTAL ASSESSMENT

The Strategy considers that the LFRMS is a significant local strategy and, consequently has been appraised under the Strategic Environmental Assessment (SEA) Regulations. Reprioritisation of flood risk areas has been carried out taking into account environmental factors assessed in the SEA report. More detailed assessment of flood risk management actions, including revenue works and capital schemes will be undertaken using the SEA findings.

Where possible, opportunities should be sought to enhance the river corridor habitats, landscape, access and amenity facilities to support the local planning policy drive to develop green infrastructure and increase access to the riversides. The effect of the strategy on the Council's carbon emissions, and hence climate change, are part of the Strategic Environmental Assessment.

The Councils Climate Change Adaptation Plan identifies specific measures which are targeted at managing the consequences of more frequent severe rainfall events. These measures have been addressed by complementary measures in this Strategy.

Funding applications for flood defence works are assessed against criteria which also assess benefits unrelated to flood risk and projects which deliver environmental improvements score more highly and are therefore more likely to obtain funding.

12.0 COMMUNICATIONS AND ENGAGEMENT

Consultation on the strategy was carried out in 2 stages. The first stage of consultation was carried out as part of the strategy development and was limited to other RMAs and stakeholders who have a major involvement with the strategy. The strategy places obligations on these organisations, so they were given the opportunity to contribute to the draft before was circulated more widely.

The secondary consultation was carried out on the updated draft strategy and the Strategic Environmental Assessment simultaneously. This consultation was available on the Council's website and open to all (e.g. communities, flood action groups, Parish Councils, members of the public etc). A combination of targeted consultations and publicising the existence of the strategy was used to maximise the breadth and quantity of feedback.

This strategy has been updated to take into account responses from both stages of the consultation.

13.0 CIVIL CONTINGENCIES AND COMMUNITY RESILIENCE

The Emergency Planning Shared Service, Rotherham & Sheffield have responsibility for the planning for and management of the Council's response to emergencies, through the Borough Emergency Plan and any other relevant Plans.

The increasing knowledge of flood risk will be used to feed into the Rotherham Multi-Agency Flood Response Plan, particularly in the following areas:

- Production of flood hazard maps combining depth and velocity information.
- Improved assessment of flood risk to critical infrastructure utilities, i.e. gas, electricity, water and telecommunications installations and the consequences of the loss of these installations during flooding.
- Principal highways. Major flooding incidents
- o Business continuity.
- o Reservoir inundation plans, including reservoirs outside of Rotherham.
- Determine in greater detail the risk of flooding to residential and non residential buildings.

14.0 THE ROLE OF THE PLANNING AUTHORITY

To meet the requirements of the Strategy the role of the Planning Authority is as follows (refer also to item 6.9 above):

- Responsibility to consider flood risk in Local Plans.
- Responsibility to consider flood risk when assessing applications for development.
- Working with the SAB at early pre-planning stage.

15.0 SUDS APPROVING BODY (SAB)

Section 6.10 lists the duties of the SAB. Implementation of this section of the Flood and Water Management Act 2010 is now expected to come into force in autumn 2014 for major developments and in 2017 for other developments with drainage implications.

This section will be updated when further information about the implementation is available.

16.0 ADDRESSING THE SKILLS GAP

The skills necessary to undertake new responsibilities imposed on the Council by the FWM Act have been partially addressed Defra's capacity building training programme. The introduction of SABs will require additional staff resources and training and funding arrangements for both the adoption and future maintenance.

The phased implementation of the FWM Act relating to SuDS, as currently proposed, will reduce the impact for the first 3 years and the ongoing maintenance liability will accumulate over the years from a zero base. It is anticipated that, until the second phase of the implementation, existing resources will be sufficient. A more detailed assessment of staffing levels and training requirements will be made when full details of the SAB process are confirmed by government.

17.0 DATA MANAGEMENT

Satisfying the objectives of the Strategy will entail the collection, creation and recording of large amounts of data.

A policy to control the storage and use of this data has been produced and is included in Appendix C. The policy, which is specific to flood risk management functions is compatible with the Council's data management policies, licensing agreements and legislation such as the Data Protection Act and The Freedom of information Act.

It is recognised that in order to achieve the maximum benefit from the available data, it should be freely available. The policy considers the most appropriate format for the data to be made available, taking into account the restrictions above. Modelled predictions of flood extents and similar data should not be presented in a format which implies a greater accuracy than can be achieved in practice.

18.0 THE ROLE OF SCRUTINY AND OVERVIEW COMMITTEES

The Flood and Water Management Act requires LLFAs to ensure that adequate scrutiny arrangements are put in place, including arrangements to review and scrutinise the exercise by risk management authorities of flood risk management functions or coastal erosion risk management functions which may affect the local authority's area.

Risk management authorities must comply with a request made by an overview and scrutiny committee for information and/or a response to a report, and must have regard to reports and recommendations of an overview and scrutiny committee. In effect, the Act extends Local Authority scrutiny to cover the full range of flood risk management activities carried out within the local authority area.

The Local Government Association Framework to assist the development of the Local Strategy for Flood Risk Management identifies the following areas to be considered for the strategy.

- What existing expertise exists among elected members in the locality?
- Have there been previous scrutiny exercises on a task and finish select committee approach that could provide a local model?
- Can an existing committee undertake the role, or is an entirely new grouping required? Does the area wish to focus on specific priorities, or to take a broad overview of the whole range of water management activities?
- How can the scrutiny process be developed as a two-way dialogue between committee members and risk management authorities, such that the expertise and knowledge of Members is enhanced and deepened?
- Member support can be developed through proactive briefing and workshops, especially in developing an understanding of the roles of different risk management authorities; and
- The rationale for, and scope of the Local Flood Risk Management Strategy needs to be explained clearly, particularly its local relevance in relation to other existing priorities.

19.0 REVIEWING AND REVISING THE STRATEGY

The Flood Risk Regulations 2009 stipulate a six year cycle of flood risk planning based on a four stage process of:

- Undertaking a Preliminary Flood Risk Assessment (PFRA) (2011).
- Identifying flood risk areas (2011).
- Preparing flood hazard and risk maps (2013).
- o Preparing flood risk management plans (2013).

The Strategy will be reviewed, revised and subjected to Scrutiny and Council Approval on the six year cycle as a minimum. The Strategy is a living document and it will be necessary to update parts on a more frequent basis, for example following changes in legislation or major flooding incidents. Sections of the Strategy which are required to be updated on a more frequent basis, such as the action plan, have been included as appendices to allow easy revision.

ROTHERHAM MBC (LLFA) – ACTION PLAN
Objective 1 - Improve the level of understanding of local flood risk within the LLFA

_	Action	Action Plan	Responsibility	Target Date
1.1	Review the skills and knowledge of FRM officers and others and address any identified weaknesses.	Assess what skills are required to deliver effective flood risk management. If required skills and resources are not currently available, determine the best way to obtain them, e.g. develop inhouse or buy in as and when necessary. The resources required to carry out the SAB function are still currently unknown.	LLFA SAB	Dec 2014
1.2	Record Historical Flood Data	Capture historic flood data from Council's records in GIS format. Future flooding to be recorded on the same system.	LLFA	Completed
1.3	Information from stakeholder engagement	Collect data from stakeholders about drainage systems and flood incidents.	LLFA	Completed
1.4	Record Drainage and Flood Assets including critical assets	Identifying the location, capacity and condition of drainage assets is key to understanding how local flood risk is managed. Understanding the interaction between rivers, watercourses, sewers, highway drains, private drainage SuDS, reservoirs, land drainage, groundwater and overland flows is critical to understanding flood risk. The level of detail currently recorded varies greatly across these differing asset types.	LLFA	Majority by Dec 2013 but ongoing
1.5	Predicted flood risk	Review currently available models of flooding including The Environment Agency's flood maps and FMfSW and AStSWF. Risk of flooding from Surface Water mapping also considered.	LLFA	Completed
1.6	Detailed assessment high flood risk locations identified in PFRA	Rotherham's PFRA identified 106 locations where critical infrastructure or 10 or more residential properties are at risk of surface water flooding, according to the modelling done by the Environment Agency. These areas will be investigated in detail to verify the risk and determine whether mitigation measures are required. If so, the feasibility of mitigation measures will be assesses, including an assessment of cost/benefit and therefore the likelihood of funding.	LLFA	Mar 2013 20% Mar 2014 60% Mar 2015 100%

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1.6 cont	Detailed assessment high flood risk locations identified in PFRA	The interaction between river and surface water flooding is particularly complex and needs to be better understood by the Environment Agency and the LLFA if flood risk is to be accurately	LLFA	Mar 2013 20%
	(continued)	assessed.		Mar 2014 60%
		The at risk areas, which have been prioritised by number of		
		properties at risk and their environmental sensitivity, will generally assessed in priority order, but areas may be assessed before those with a higher priority if there is an operational reason to do so, e.g. they are in the same sub-catchment as a higher ranked area or if there is a flood or major development planned.		Mar 2015 100%
				SWMPs
		4 number Surface Water Management Plans have been carried out in the following areas:		completed
		o Town Centre / Forge Island		
		o Wath-Upon-Dearne		
		o Aston / Aughton / Swallownest		
		Anston / Dinnington / Laughton Common		
		The SWMP areas include 26 of the 106 risk areas.		

Objective 2 - Improve the level of understanding of local flood risk amongst partners, stakeholders and communities.

	1			
2.1	Publish a clear strategy and publicise its existence	The strategy is by nature, a technical document addressing complex issues but it is imperative that the main priorities in the strategy are understandable by all stakeholders.	LLFA	June 2014
2.2	Develop information strategy to improve partner and stakeholder knowledge	The Council needs to translate the technical information on flood risk into simple, readily understandable terms. Text and graphics should be used to allow partners and stakeholders to understand the risk relevant to their interests. Innovative means of conveying complex information will be investigated, sharing best practice from other LLFA's. Planned publication of predicted surface water flood risk areas will raise the profile of flood mapping with the general public. It is important that information about how the published information in interpreted is included with the published information.	LLFA	Dec 2014

Objective 3 - Formalise arrangements between Risk Management Authorities

3.1	Agree protocols	Risk Management Authorities are listed in section 6, with a	LLFA	Dec 2014
		description of their roles and responsibilities.		
		Responsibilities of parties to be mutually agreed with agreed protocols for sharing of information, promoting joint works.		
3.2	Formalise arrangements with adjoining LLFAs. Cross Boundary Issues.	Identify which catchments and/or watercourses extend beyond the borough boundary.	LLFA Adjoining LLFAs	Dec 2014
	Oross Bournary Issues.	Adjoining local authorities to be consulted on the strategy.	LLI AS	
		FRM responsibilities on watercourses which cross or run along boundaries to be agreed with neighbouring authorities.		
		Where possible, procedures and systems should be compatible with procedures of adjoining authorities. Data formats should be the same or easily convertible. Sharing of information and technology.		
3.3	Environment Agency	Responsible for the management and maintenance of flows within Main Rivers.	LLFA	Dec 2014
		Strategic overview for all forms of flooding		
3.4	Water Companies	Water companies (Yorkshire Water and Severn Trent) have a duty to maintain public sewers and ancillaries.	LLFA	Dec 2014
		Develop agreements with water companies		
3.5	Danvm (formerly Dearne & Dove) IDB	Responsible for the management and maintenance of flows within Ordinary watercourse within their domain (i.e. part of Wath Upon Dearne area.	LLFA	Dec 2014
3.6	Highways Agency	The M1, M18 and associated junctions are the only highways in Rotherham Managed by the Highways Agency. Assess the effect of the motorway assets on flood risk and whether a formal arrangement is necessary.	LLFA	Dec 2014

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Objective 4 - Formalise Policies and Procedures for new responsibilities at set out in the Flood Risk Regulations (2009) and Flood and Water Management Act (2010).

4.1	Consenting Works Affecting Ordinary Watercourses	Produce a procedure for consenting of works affecting ordinary watercourses. The procedure to be an appendix to this strategy.	LLFA	June 2014
4.2	Carry out Flood investigations Section19 Flood Investigations Other Investigations	Produce local guidelines for public use. Section 19 of the Flood and Water Management Act 2010 imposes a duty on Local Authorities to investigate flooding incidents to determine and publish which risk management authorities have relevant flood risk management functions and whether these were exercised. A procedure / policy is required to define how this duty will be satisfied. The Council's will investigate all internal flooding but the criteria under Section 19 of the Act will be based on 5 or more internal flooding to properties. The findings of Section 19 investigations will be published on the Council's website. In practice, the Council will investigate, to some degree, all reported flood incidents. As a minimum, locations and details from the report,	LLFA	Policy June 2014 Publish S19 Findings- Within 6 Months Of Flood
4.3	Designating Flood/ Drainage Assets	will be recorded on the Council's mapping system. The procedure to be an appendix to this strategy. The Councils current knowledge of 3rd party drainage features or structures is limited. Work carried out to deliver Objective 1 will allow the Council to judge the merits of designating such assets. The Council is obliged to designate new SuDS created by the SAB. The Council will formulate a procedure for the designation of non-SuDS features including criteria to determine which assets to designate.	LLFA	June 2014

Objective 5 - Create Asset Record and Register to record drainage infrastructure and FRM assets

5.1	Create Asset Record	Fundamental to undertaking flood risk management duties on	LLFA	Dec 2014
	showing location of	ordinary watercourses is knowing the location and extents of these		
	watercourses where	watercourses. Although the intention is to work towards a "definitive"		
	consenting powers have	watercourse map, it is not a priority to achieve 100% because doing		
	been transferred to	so in areas of low flood risk would not be an efficient use of		
	LLFA	resources.		
5.2	Asset Register and	Establish Asset Register and Record and update year on year.	LLFA	Procedure
	Record			_
	Maintain a mublic Accet	Determine what information from the record is to be record with light		
	Maintain a public Asset	Determine what information from the record is to be made publicly		_
	Register	available and the format for doing so. The procedure to be an appendix to this strategy.		Sept 2014
5.3	Populate above record	The Councils register of drainage assets will include the	LLFA	90% by
	to include at least 90%	following structures or features		_
	of watercourses by	For pipes / culverts		Dec 2014
	length and all	The diameter is greater than 600mm or cross sectional area is		
	watercourses in	greater than 0.3m2 or		
	identified flood risk	The pipe/culvert has a recorded history of flooding or		
	areas	The pipe/culvert is within 20m of a cluster of 5 or more recorded		
		flood incidents (non-cellar) – excluding pipes of 225mm diameter or less		
		For trash grilles		And Establish Register Sept 2014
		The grille is council-maintained and is on the monthly clearance		
		programme or		
		The grille is privately-maintained and total blockage would cause		
		flooding of adjacent infrastructure		
		For surface water pumping stations		
		All pumping stations to be included		
		For SuDS		
		All new SuDS adopted by the LLFA		

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Objective 6 - Improve management of Council owned drainage and flood management assets

6.1	Identify highest risk open and closed watercourses, highway drains and other drainage/flood features	The Council has a statutory duty to maintain highway drains but only a riparian responsibility to keep watercourses within its ownership clear of obstructions. Some watercourses create a high flood risk for nearby communities and would benefit from a more structured and targeted maintenance regime. The council will carry out a comprehensive, methodical survey of all known, non-Environment Agency or Water Company, assets	LLFA	Dec 2014
6.2	Watercourses in Council Land	As a major landowner, the Council has riparian responsibility for many watercourses. The extents of these will be identified, and the department responsible for their maintenance will be determined. Currently there are culverted watercourses where the department responsible may not even be aware of the existence of the culvert. CCTV surveys of surface water culverts carried out following recent flooding incidents has shown that some of the culverts are in poor condition. The extent of the potential liability is not currently known. A culvert in Council owned land in Swallownest, the existence of which was not known in 2009, collapsed and the cost of replacing just 80m of this was in excess of £250k. A plan for inspection and maintenance of open watercourses and culverts in Council land will be produced.	LLFA	Dec 2014
6.3	Highway Structures	Many highway structures have an effect on watercourses, bridges, culverts and walls. All structures are inspected periodically, but the inspections are infrequent and concentrate on the condition of the structure, rather than the effect on flow due to silt and vegetation etc. The Design Manual For Roads and Bridges, Volume 1, Section 1, Part 1 BD/2/12 Paragraph 3.3 states that culverts or bridges with a clear span or diameter greater than 0.9m require technical approval, and once constructed, require periodic inspection.	LLFA	Dec 2014

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6.3 cont	Highway Structures (continue)	Rotherham Streetpride inspects and maintains many smaller assets in the same way, but pipes smaller than 450mm diameter are generally not classed as highway structures. Responsibility for their maintenance should be determined.	LLFA	Dec 2014
6.4	Highway Drainage Systems	Historically, highway drainage systems within Rotherham have not been well recorded, if at all. A highways asset register Is currently being created, which includes recording the locations of assets visible on the surface, such as manhole covers and gullies. Highway drains will be recorded as part of the data gathering for the asset record.	LLFA	Dec 2015
6.5	Private Drainage Systems	Since the transfer of the majority of private sewers to the water companies, the number of private sewers has decreased massively, however surface water sewers did not transfer. Private drainage systems which remain the responsibility of the Council will be identified, and the department responsible for their maintenance will be determined.	LLFA	Dec 2014
6.6	Develop an affordable cyclical inspection and maintenance regime based on risk	Maintenance budgets are limited and need to be targeted at those areas where the risk of flooding is highest. The extent of flood risk and the asset type, condition and vulnerability to temporary blockage will influence the type and frequency of maintenance required. The maintenance of the watercourses to maximise the drainage of surface water will be balanced with sensitive treatment of the biodiversity elements. Maintenance plans will incorporate appropriate direction on responsible management of the local water environment. Cyclical maintenance plans will be reviewed for trash grilles protecting council-owned culverts, highway gullies and open watercourses where regular clearance would be beneficial in protecting downstream properties and infrastructure. Plans will be adapted as new information is collected.	LLFA	Dec 2014

6.7	Implement a responsive,	The Council cannot afford to carry out planned, preventative	LLFA	Dec 2014
	reactive maintenance	maintenance to all the drainage assets it is responsible for. There will		
	regime based on risk	be some situations where the Council may have to respond		
		reactively to situations which arise suddenly or are reported directly		
		by the public. The speed and type of response will be determined by		
		the level of flood risk and the resources available. Existing council		
		systems for receipt of, and response to, requests for maintenance		
		work will be re assessed to ensure a risk-based approach is		
		followed.		

Objective 7 - Encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets

7.1	Identify highest risk	The vast majority of watercourses are in private ownership. Whilst	LLFA	Dec 2014
	private flood defence	riparian owners have a general responsibility to keep watercourses		2002011
	and drainage assets	free of obstruction, a higher level of maintenance, which might help		
		in maximising capacity, will need support and encouragement for		
		private landowners. More often than not, landowners will be unaware		
		of the level of flood risk associated with their watercourse. The		
		Council will filter information collected under for the asset record to		
		identify private assets. The assets will be allocated a flood risk		
		significance level, to highlight the private assets of greatest concern.		
		A database of higher-risk private assets, with details of the risk and		
		suggested maintenance regimes will be compiled.		
		Historically the Council has had powers (but no duty) under the Land		
		Drainage Act to take enforcement action against riparian owners.		
		These powers have been little used and have only been used		
		reactively. The new duties require the Council to take a more pro-		
		active role, particularly with regard to inspecting and recording of		
		third party assets.		
7.2	Develop technical	Improving knowledge of the location and condition of private	LLFA	Dec 2014
	advice for owners to	drainage assets, acquired through Measures 1.1 and 1.3, will allow		
	guide them in preparing	the Council to suggest appropriate proactive maintenance measures		
	local maintenance plans	to reduce the risk of flooding to themselves and adjacent		
		landowners. Maintenance plans will manage and maintain both the		
		efficient flow of water along the watercourse and a healthy and		
		attractive biodiverse environment. A general advice note on riparian		
_		rights and responsibilities is available from the Environment Agency.		
7.3	Partnership Working	Maximise the benefits from partnership working with flood risk	LLFA	Dec 2014
		partners and our stakeholders		

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Objective 8 - Co-ordinate Flood Risk Management and Planning functions to reduce flood risk to existing and proposed developments.

ueve	developments.				
8.1	Develop and apply a robust local policy on FRM and drainage solutions on new development sites	The development of new sites and redevelopment of existing sites gives the Council an opportunity to reduce flood risk within the sites and upstream and downstream of the sites. National planning guidance exists which encourages the Council to adopt a consistent approach when recommending appropriate flood risk measures for new development sites. The national guidance is currently under review but the Council is committed to adopting a similar, local approach in the future which will replicate the national guidance. The council will continue to set stretching targets for developers in relation to permitted discharges from new or redeveloped sites, reassessing the targets as the council acquires more evidence of local flood risk. The Council's advice on flood risk and drainage for new development sites, based on the national guidance, will be reviewed against the developing legislation and strengthened to give clear and robust advice to developers.	RMBC Planning	On establishm ent of SAB	
8.2	Develop a process with the Planning Department to create clear advice and direction to developers on FRM and Drainage	Flood management and drainage solutions for development sites can be space-intensive and it is vital that early discussions with developers and planning officers take place to allow appropriate provision to be designed into the development. It is essential that the local guidance to be produced in Measure 5.1 forms part of an internal council procedure that integrates technical advice with the planning application process. Agreement and application of FRM and Drainage advice has to be translated into appropriate conditions attached to planning approvals. The Council will develop a procedure to ensure that appropriate and timely advice is given to planners and developers and that planning approvals and conditions are clear and enforceable.	RMBC Planning	On establishm ent of SAB	

8.3	Use available information on flood risk to identify appropriate development potential	The Council, as Planning Authority, has a responsibility to direct development towards areas where flood risk is lowest and any proposed development is appropriate to the flood risk present at the site. An increasing amount of evidence is available to identify and quantify the flood risk that exists across the borough. The evidence base for flood risk will be used alongside environmental, social and financial factors to determine sustainable solutions for local issues. The relevant previous and developing plans and strategies will be reviewed. The Councils Core Strategy for the Local Plans is complete and flood risk is presented in broad terms. The aspirations of this strategy, and the related plans and policies, will be embedded in the future land allocation processes required by the Local Plans. Incorporating policies and recommendations within Rotherham MBC LDF, through the development of a water management and flood resilient design Supplementary Planning Document (SPD). Actively manage flood risk associated with new development proposals. Influence land allocations in Local Plans to reflect flood risk	LLFA RMBC Planning	Dec 2014
8.4	Establish the SuDS Approving Body (SAB)	risk. The timetable implementation of the Flood and Water Management Act 2010 in relation to SuDS and the establishment of SABs is currently unknown but it is now expected to come into force from Autumn 2014.	Defra RMBC	Autumn 2014

Objective 9 - Take a sustainable approach to FRM, balancing economic, environmental and social benefits from policies

and programmes, including a Strategic Environmental Assessment

9.1	Carry out a strategic	The Council considers that the LFRMS is a significant local strategy	LLFA	SEA
	assessment of the	and, consequently requires appraisal under the Strategic		Completed
	environmental impact of	Environmental Assessment (SEA) Regulations.		Nov 2013
	the strategy	, , ,		
		Where possible, opportunities should be sought to enhance the river corridor habitats, landscape, access and amenity facilities to support the local planning policy drive to develop green infrastructure and increase access to the riversides.		
		More detailed assessment of environmental impact of flood risk management actions, including revenue works and capital schemes will be undertaken using the SEA findings.		Dec 2014
9.2	Climate Change	The effect of the strategy on the Council's carbon emissions, and hence climate change, will be part of the Strategic Environmental Assessment.	LLFA	Dec 2014
		The Councils Climate Change Adaptation Plan identifies specific measures which are targeted at managing the consequences of more frequent severe rainfall events. These measures have been addressed by complementary measures in this Strategy.		
9.3	Water Framework Directive (WFD) and Biodiversity 2020	Assess the effect of the WFD and Biodiversity 2020 on existing policies and practices and develop guidelines for applicants and public. Consents for works on ordinary watercourses will require	LLFA EA	Dec 2014
		assessment against the WFD. Ensure that all actions within the strategy are compliant with the WFD.		Dec 2014
9.4	Fish and Eel Passage	Determine the extent of the ordinary watercourse network where fish and eel passage issues require consideration.	LLFA EA	Dec 2014

Objective 10 - Identify and promote schemes to reduce flood risk which are viable considering practicality, cost benefit and funding potential.

and	funding potential.			
10.1	Develop a programme of schemes and initiatives which have a realistic prospect of being funded	The strategy describes a suite of measures which can be taken to manage local flood risk. Some measures are more affordable than others with larger capital improvement schemes offering the greatest challenges for funding. The national funding administered by the Environment Agency targets schemes with evidenced high risk of property flooding, preferably with contributory funding from partners and stakeholders benefiting from the scheme. The Council's immediate priorities, using the outputs from the SWMP work carried out under Measure 1.6, are to establish an evidence base for the location and the extent of the risk of local flooding, quantify the size and potential effect of the risk and then identify costed options for appropriate and affordable mitigation measures. A programme of suitable projects which may attract capital funding will gradually develop over time. The council will deliver the actions detailed in the SWMP to help identify projects for the higher priority areas in the district.	LLFA	Dec 2014
		develop over time. The council will deliver the actions detailed in the SWMP to help identify projects for the higher priority areas in the		
		Define an action plan type for all the flood risk areas e.g. Do nothing Maintain existing systems Promote flood alleviation schemes Promote Property Level Flood Protection		

10.1 Develop a programme o cont schemes and initiatives	· · · · · · · · · · · · · · · · · · ·	LLFA	Dec 2014
which have a realistic prospect of being funded (continued)	 Green Ings Culvert (Station Road) Wath-Upon-Dearne Whiston Brook Catcliffe Pumps Aldwarke Lane 		
10.2 Develop and implement a policy on de-culverting	The presence of culverts has been identified as a key factor in	LLFA	Dec 2014

Objective 11 - Identify potential sources of funding.

11.1	Determine all other	Potential sources of funding are listed in Section 9.0.		
	funding sources,			ļ
	Council, partners and	Manage expectations we will need to set out clearly the aims of the		
	other external, and	Local Flood Risk Management Strategy.	LLFA	June 2015
	maximise "match-			
	funding"			

Objective 12 - Co-ordinate Flood Risk Management and Emergency Planning procedures

12.1	Embed the LFRMS into	The Emergency Planning Shared Service, Rotherham & Sheffield	LLFA	Dec 2014
	response and recovery	have responsibility for the planning for and management of the		
	plans and use	Council's response to emergencies, through the Borough Emergency		
	developing knowledge	Plan and any other relevant Plans.		
	on flood risk to "tune"			
	emergency procedures	The increasing knowledge of flood risk will be used to feed into the		
		Rotherham Multi-Agency Flood Response Plan, particularly in the		
		following areas:		
		Production of flood hazard maps combining depth and velocity		
		information.		
		Improved assessment of flood risk to critical infrastructure, principal		
		highways		
		Business continuity.		
		lava dation plans		
		Inundation plans.		
		Determine in greater detail the risk of flooding to utilities, i.e. gas,		
		electricity, water and telecommunications installations and the		
		consequences of the loss of these installations during flooding.		
		consequences of the loss of these installations during hooding.		

Objective 13 - Take into account equalities by carrying out an Equality Impact Assessment

13.1	Equality Impact	The process will be in line with the guidance from the Equality and	LLFA	June 2014
	Assessment of	Human Rights Commission. An Equality Analysis and consultation		
	completed strategy	process will be carried out in accordance with the Council's Equality		
		Policy.		

Objective 14 - Promote buy-in by stakeholders by consulting during Strategy preparation and on completed Strategy

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14.1	Consultation	Consultation will be carried out in 2 stages. The primary consultation will be carried out as part of the strategy development. This consultation will be targeted at stakeholders who have a major involvement with the strategy and will be carried out	LLFA	Completed	
		The secondary consultation will be carried out when a draft strategy has been completed.	LLFA	Completed	
		Rotherham Council has engaged with the public and Community Action Groups regarding future flood risk management, to build trust, raise awareness, and gain local knowledge.			

Objective 15 - Secure commitment from all Flood Risk Management Authorities to act in accordance with the Strategy by official acceptance by the relevant Boards, Committees, PSOC etc.

15.1	Present draft strategy to	The Strategy should be presented to the Scrutiny and Overview	LLFA	Feb 2014
	PSOC	Committee as a draft and also on completion.		