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WSP

LOCAL FLOOD RISK MANAGEMENT STRATEGY

Solihull Metropolitan Borough Council

02/04/15

Confidentiality: Public

Solihull Metropolitan Borough Council

Quality Management

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Prepared by	Pete Harrison	Pete Harrison	Pete Harrison	Richard Stevens and Pete Harrison	Richard Stevens and Pete Harrison	Sarah Homer and Pete Harrison
Signature						
Checked by	Not checked	Andy Smith	Andy Smith	Andy Smith	Andy Smith	Pete Harrison and Andy Smith
Signature						
Authorised by	Not authorised	Not authorised	Ola Holmstrom	Ola Holmstrom	Ola Holmstrom	Andy Smith
Signature						
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Cover Photograph: Mount Brook and River Blythe confluence at Cheswick Green

Local Flood Risk Management Strategy

Solihull Metropolitan Borough Council

Client

Solihull Metropolitan Borough Council
Council House
Manor Square
Solihull
West Midlands
B91 3QB

Consultant

WSP UK
Colston 33
Bristol
BS1 4UA
UK

Tel: +44 11 7930 2000
Fax: +44 11 7929 4624

www.wspgroup.co.uk

Registered Address

WSP UK Limited
01383511
WSP House
70 Chancery Lane
London
WC2A 1AF

WSP Contacts

Project Manager – Andy Smith
Strategy Co-ordination and Report Author – Pete Harrison
Project Director – Ola Holmstrom

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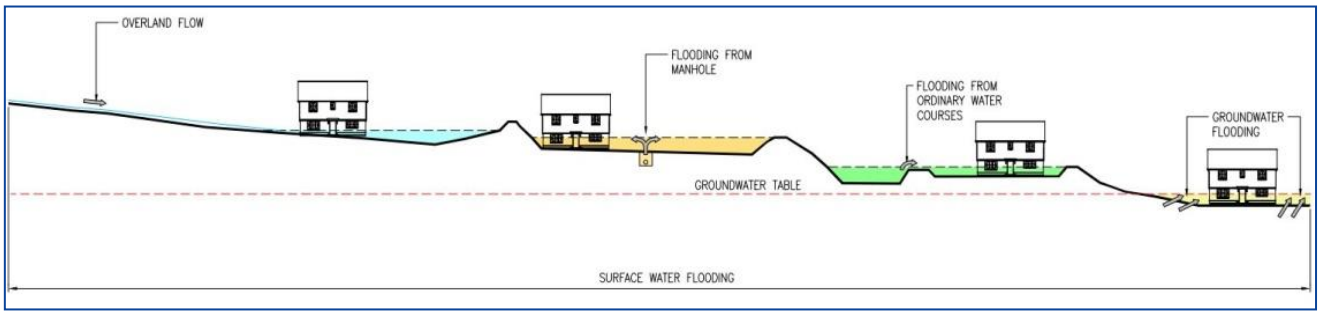
Key Definitions

Groundwater flooding	Caused by raised groundwater levels, typically following prolonged rainfall. High groundwater levels may result in increased flooding from overland flow.
Main River	Main Rivers are usually larger streams and rivers which have been designated as such by Defra and the Environment Agency. The Environment Agency have powers to undertake works on any stretch of main river and are responsible for flood risk management activities associated with them.
Ordinary watercourse	Ordinary watercourses are a statutory type of watercourse in England and Wales. Ordinary watercourses include every river, stream, ditch, drain, cut, dyke, sluice, sewer (other than a public sewer) and passage through which water flows and which does not form part of a Main River.
Overland flow/surface water runoff (pluvial flooding)	Water flowing over the ground surface that has not reached a natural or artificial drainage channel.
Surface water flooding	In this context, surface water flooding describes flooding from sewers, drains and runoff from land, small watercourses and ditches that occurs as a result of heavy rainfall.



Glossary

Area Action Plan (AAP)	A type of Development Plan Document focussed on a specific location or area subject to conservation or significant change (e.g. major regeneration).
Catchment Flood Management Plan (CFMP)	A strategic planning tool through which the Environment Agency works with other key decision-makers within a river catchment to identify and agree policies for sustainable flood risk management.
Chance of flooding	The chance of flooding is used to describe the frequency of a flood event occurring in any given year, e.g. there is a 1 in 100 chance of flooding in this location in any given year. This can also be described as an annual probability, e.g. a 1% chance of flooding in any given year. The standard notation is 'a 0.5 per cent (1 in 200) or greater chance of happening each year'.
Department for Communities and Local Government (DCLG)	Communities and Local Government is the government department which sets policy on local government, housing, urban regeneration, planning and fire and rescue. They have responsibility for all race equality and community cohesion related issues in England and for building regulations, fire safety and some housing issues in England and Wales. The rest of their work applies only to England. They provide funding to and agree expenditure plans for Local Authorities.
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, communications, electricity sub-stations, water treatment works, transport infrastructure and reservoirs.
Department for Environment, Food and Rural Affairs (Defra)	The government department responsible for policy and regulations on environmental, food and rural issues. This includes all aspects of flood risk management.
DG5 Register	A Water and Sewerage Company (WaSC) held register of properties which have experienced sewer flooding (either internal or external flooding) due to hydraulic overload, or properties which are 'at risk' of sewer flooding more frequently than once in 20 years.
Environment Agency (EA)	Established by the Environment Act 1995, and is a Non-Departmental Public Body of Defra. The Environment Agency is the leading public body for protecting and improving the environment in England. It is responsible for taking a strategic overview of the management of all sources of flooding. This includes, for example, setting the direction for managing the risks through strategic plans; providing evidence and advice to inform Government policy and support others; working collaboratively to support the development of risk management skills and capacity; and providing a framework to support local delivery. The Agency also has operational responsibility for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea.
Environment Agency Flood Zones	Flood Zones produced by the Environment Agency which provide an indication of the probability of flooding (from rivers and the coast) within all areas of England and Wales.
Exceedance flows	Excess surface water flow that occurs when the capacity of the drainage system is exceeded.
Flood and Coastal Erosion Risk Management (FCERM) policy	Sets out the principles that should guide decision making on the sustainable management of flood and coastal erosion risk in England.
Flood and Coastal Erosion Risk Management Grant in Aid (FCERM GiA)	Central government funding to Flood Risk Management Authorities in order to manage flood and coastal erosion risk. Grant in Aid funding is provided by Defra to the Environment Agency to invest in flood risk management schemes. Funding from the Environment Agency which can be provided to local authorities to invest in flood risk schemes is called Capital Grant. Capital Grant is approved through the Project Appraisal Review (PAR) process.
Flood Risk Assessment (FRA)	A study to assess the risk to an area or site from flooding, now and in the future. It should also assess the impact that any changes or developments on the site or area will have on flood risk to the site and elsewhere. It may also identify, particularly at more local levels, how to manage those changes to ensure that flood risk is not increased (see NPPF paragraphs 100 to 104 and the Flood Risk and Coastal Change section of the Planning Practice Guidance to the NPPF).
Flood Risk Management Plan (FRMP)	A plan for the management of a significant flood risk. The plan must include details of: a) objectives set by the person preparing the plan for the purpose of managing the flood risk, and b) the proposed measures for achieving those objectives (including measures required by any provision of an Act of subordinate legislation).
Flood Risk Regulations 2009	Legislation that replaced the Floods Directive in England and Wales.
Flood (Risk Management) Strategy	An Environment Agency study which provides a detailed assessment of flood risk (from rivers and the sea) in a location or for a whole catchment, and the preferred approach for long term management of these risks.

Flood risk map	A map showing in relation to each flood risk (a) the number of people living in the area who are likely to be affected in the event of flooding, (b) the type of economic activity likely to be affected in the event of flooding, (c) any industrial activities in the area that may increase the risk of pollution in the event of flooding, (d) any relevant protected areas that may be affected in the event of flooding, (e) any areas of water subject to specified measures or protection for the purpose of maintaining the water quality that may be affected in the event of flooding, and (f) any other effect on - (i) human health, (ii) economic activity, or (iii) the environment (including cultural heritage).
Flood Map for Surface Water (FMfSW)	The Flood Map for Surface Water shows areas where surface water would be expected to flow or pond, as a result of two different chances of rainfall event. The areas at risk of flooding are displayed in two bands showing a) surface water flooding and b) areas of deeper surface water flooding. This map has now been superseded by the Updated Flood Map for Surface Water (uFMfSW).
Flood and Water Management Act (2010)	The Flood and Water Management Act (FWMA 2010) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from the Pitt Review into the 2007 floods and placed new responsibilities on the Environment Agency, local authorities and property developers (amongst others) to manage the risk of flooding.
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.
Fluvial Flooding	Fluvial flooding occurs when rivers overflow and burst their banks due to high or intense rainfall which flows into them
Greenfield runoff rate	The rate of runoff which would occur from a site that was undeveloped and undisturbed.
Groundwater Flooding	Groundwater flooding is caused by raised groundwater levels, typically following prolonged rainfall. High groundwater levels can contribute to flooding from overland flow.
Highways Agency	The national body responsible for managing, maintaining and improving England's motorways and trunk roads.
Hotspot	A hotspot is an area perceived and identified locally as being at greatest risk of surface water flooding.
LiDAR	Light Detection and Ranging - high accuracy, high resolution elevation data captured by airborne systems.
Local Plan	Local planning authorities must prepare a local plan which sets planning policies in a local authority area. Local plans must be positively prepared, justified, effective and consistent with national policy in accordance with section 20 of the Planning and Compulsory Purchase Act 2004 (as amended) and the National Planning Policy Framework.
Local Planning Authority (LPA)	The local planning authority (LPA) is empowered by law to exercise planning functions, often the local Borough or district Council. National Parks and the Broads Authority are also considered to be local planning authorities. County Councils are the authority for waste and minerals matters.
Local Resilience Forums (LRF)	LRFs are multi-agency forums, bringing together all organisations that have a duty to co-operate under the Civil Contingencies Act, and are those involved in responding to emergencies. They prepare emergency plans and co-ordinate the response to major emergencies including flooding.
Main River	Main Rivers are usually larger streams and rivers, but can be smaller watercourses. Main Rivers are determined by Defra in England, and the Environment Agency has legal responsibility for their maintenance and flood risk management activities associated with them.
National Planning Policy Framework (NPPF)	The National Planning Policy Framework was published in March 2012. It sets out the government's strategy for planning, aiming to make the planning system less complex and more accessible, to protect the environment and promote sustainable growth.
Net Present Value (NPV)	NPV is used to describe the difference between the present value of costs and benefits of flood risk management schemes.
Ordinary watercourse	An ordinary watercourse is any river, stream, ditch, cut, sluice, dyke or non-public sewer which is not a Main River. The local authority or Internal Drainage Board have powers and responsibilities for such watercourses.
Partner	Defined as someone with responsibility for decisions or actions. Partners share joint responsibility for these decisions/actions.
Pitt Review	An independent review of the 2007 summer floods by Sir Michael Pitt, which provided recommendations to improve flood risk management in England.
Pluvial flooding	Pluvial flooding (or surface water flooding) is caused by rainfall and occurs due to water ponding on or flowing over the ground surface before it reaches a drain or watercourse.
Property Level Flood Protection measures	Protection measures are designed to keep flood water out of buildings, and could include flood guards, flood doors, non-return valves and airbrick covers.

Rate Support Grant	Funding mechanism from CLG to Local Authorities, which provides funding for all Local Authority responsibilities.
Regional Flood and Coastal Committee (RFCC)	The Regional Flood and Coastal Committee (RFCC) is a committee established by the Environment Agency under the Flood and Water Management Act 2010 that brings together members appointed by Lead Local Flood Authorities (LLFAs) and independent members with relevant experience in flood risk management.
Riparian owners	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 freely.
Risk	In flood risk management, risk is defined as the probability of a flood occurring x consequence of that flood.
Risk of Flooding from Surface Water Map	The Risk of Flooding from Flood Map for Surface Water was made public on the Environment Agency's website in December 2013. It improves upon the Flood Map for Surface Water (2010), and the Areas Susceptible to Surface Water Flooding maps (2009) through incorporating improvements in modelling techniques, understanding and data; combining appropriate local mapping from LLFAs with national mapping to provide an improved and consistent picture of surface water flood risk; and providing velocity and depth information for a range of flood probabilities.
River Basin Management Plans (RBMP)	A management plan for all river basins required by the Water Framework Directive. These documents will establish a strategic plan for the long-term management of the River Basin District, set out objectives for waterbodies and, in broad terms, what measures are planned to meet these objectives, and act as the main reporting mechanism to the European Commission.
Sequential Test	A planning principle that seeks to identify, allocate or develop certain types or locations of land before others. The test is designed to guide development away from areas at high risk from flooding.
Severn Trent Water (STW)	One of the ten water authorities in England formed under the Water Act 1973, to supply fresh water and treat sewage for around 8 million people living in the Midlands region of England and also certain regions of Wales.
Sewerage Management Plan (SMP)	A Sewerage Management Plan is the output from the Sewerage Risk Management process.
Solihull Council	Solihull Metropolitan Borough Council.
Strategic Environmental Assessment (SEA)	Strategic Environmental Assessment (SEA) is a generic term used internationally to describe environmental assessment as applied to policies, plans and programmes. The European 'SEA Directive' (2001/42/EC) does not in fact use the term strategic environmental assessment. It requires a formal 'environmental assessment' of certain plans and programmes, including those in the field of planning and land use.
Strategic Flood Risk Assessment (SFRA)	A SFRA provides information on areas at risk from all sources of flooding. The SFRA should inform flood risk management decisions, and provides the basis from which to apply the Sequential Test and Exception Test (as defined in NPPF) in the development allocation and development control process.
Supplementary Planning Document (SPD)	A Supplementary Planning Document is a Local Development Document that may cover a range of issues, thematic or site specific, and provides further detail of policies and proposals in a 'parent' Development Plan Document.
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.
Sustainable Drainage Systems (SuDS)	Sustainable drainage systems: 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. SuDS can operate at different levels; ideally in a hierarchy of source control, local control and regional control, and can be used in both rural and urban areas.
Water and Sewerage Company (WaSC)	Set up under the Water Industry Act 1991. Ten regional water and sewerage operators provide sewerage services in England and Wales. They are South West Water, Wessex Water, Southern Water, Thames Water, Anglian Water, Severn Trent Water, Yorkshire Water, United Utilities, Northumbrian Water and Welsh Water.
Water Cycle Study	A water cycle study is a voluntary study that helps organisations work together to plan for sustainable growth. It uses water and planning evidence and the expertise of partners to understand environmental and infrastructure capacity. It can identify joined up and cost effective solutions, that are resilient to climate change for the lifetime of the development. The study provides evidence for Local Plans and sustainability appraisals and is ideally done at an early stage of plan-making. Local authorities usually lead water cycle studies, as a chief aim is to provide evidence for sound Local Plans but other partners often include the Environment Agency and water companies.

Water Framework Directive (WFD)	A European Community Directive (2000/60/EC) 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, incorporating a programme of measures to improve the status of all natural water bodies.

Non-Technical Executive Summary

What is the Local Flood Risk Management Strategy?

Under the Flood and Water Management Act 2010 (FWMA 2010) Solihull Council became the Lead Local Flood Authority (LLFA). As the LLFA, Solihull Council is responsible for leading and coordinating local flood risk management, including flood risk from ordinary watercourses, surface water, and groundwater. Other risk management authorities are responsible for other sources of flood risk, in particular the Environment Agency (flooding from main rivers) and Severn Trent Water (the local water company). These two key partners' roles and responsibilities with regards local flood risk management are set out later in this document.

The Local Strategy provides an overview and assessment of local flood risk, and sets out objectives and processes as to how Solihull Council will manage and reduce this risk. In some instances, individuals, communities and businesses will be best placed to reduce the impacts of flooding and the Local Strategy will help them to understand flood risk and the action they can take.

To ensure that the Local Strategy remains the key source of information for all elements of local flood risk management, it will be monitored and reviewed on a regular basis to ensure that the objectives are being delivered and are still relevant.

The Local Strategy complies with and complements a number of other planning policies, legislative requirements and flood risk strategies. These include the Flood and Water Management Act 2010, the National Flood and Coastal Erosion Risk Management Strategy for Englandthe National Planning Policy Framework, the Solihull Local Plan, the Solihull Strategic Flood Risk Assessment and the Solihull Preliminary Flood Risk Assessment.

How does the Local Strategy impact me?

The Local Strategy sets out how the Council and its partners expect to manage and reduce local flood risk, and how people can take action to protect themselves. Local flood risk does not cover flood risk from Main Rivers.

Developers are advised to take the Local Strategy into account when making decisions about land acquisitions and masterplanning, particularly with regards surface water flooding and the use of sustainable drainage systems (SuDS).

Is Solihull at high risk of flooding?

Although flooding is not a significant issue in Solihull, a number of historical flood events have occurred in the Borough, associated with rivers or surface water.

Historic records of fluvial flooding are concentrated along the River Blythe and the River Cole. During 2007 a large rainfall event occurred, with an estimated frequency of 1 in 75 years, resulting in extensive flooding from both rivers. More than 20 properties were flooded internally, mainly around Nethercote Gardens on the River Cole, and Cheswick Green on the River Blythe. The flooding of these properties led to some people being out of their homes for significant periods of time.

More recent flooding in November 2012 occurred in Dickens Heath and the village of Meriden, which inundated a number of properties.

The Environment Agency's Risk of Flooding from Surface Water Map has been used to identify properties at risk of flooding for a range of return periods (probability of occurrence in any given year). The mapping suggests that 1,553 properties in Solihull sit within the 1 in 30 year surface water flood outline, meaning there is a 3.3% chance of these properties flooding in any given year. Whilst the mapping is a useful guide, it does not take into account drainage arrangements that are in place, therefore the number of properties at risk is likely to be less than this.

What is Solihull doing to manage local flood risk?

It is extremely important that we develop an approach for how local flood risk can be monitored and reduced. This Local Flood Risk Management Strategy does exactly that and has identified six main objectives as follows:

- Objective 1 – Improving the understanding and communication of flood risk in Solihull
- Objective 2 – Managing the likelihood and impacts of flooding
- Objective 3 – Helping Solihull's citizens to manage their own risk
- Objective 4 – Ensuring appropriate development in Solihull
- Objective 5 – Improving flood prediction, warning and post flood recovery
- Objective 6 – Working in partnership with others to deliver the Local Strategy

Although the objectives listed above provide a framework for managing local flood risk, the most important part of the Local Strategy is the Action Plan, which demonstrates what has been completed or is on-going by the LLFA and other partners, and also explains what future works are hoped to be carried out in order to achieve each of the above objectives. The Action Plan allows for transparency and accountability between partners and the general public and is presented in Appendix A.

Who else is involved with managing local flood risk?

Partnership between different bodies is critical to managing local flood risk appropriately and effectively. In particular, the Environment Agency and Severn Trent Water are special partners called Risk Management Authorities, who also have their own statutory responsibilities.

A Strategic and Operational Board has been formed within Solihull to provide a forum for managing local flood risk. In addition to Council Officers, the board for this forum includes the Environment Agency and Severn Trent Water, amongst others.

What does the future look like in terms of local flood risk?

At all times it should be remembered that flooding is a natural process and stopping it altogether is impossible. However, through the aims, objectives and actions set out in this strategy it is intended that the risk and impact on the built and natural environment within Solihull can be mitigated and managed as much as possible in the coming years.

1 Introduction

1.1.1 Under the Flood and Water Management Act 2010 (FWMA 2010) Solihull Council became the Lead Local Flood Authority (LLFA). As the LLFA Solihull Council is responsible for leading and coordinating local flood risk management, including flood risk from ordinary watercourses, surface water, and groundwater. Other risk management authorities are responsible for other sources of flood risk, in particular the Environment Agency (flooding from main rivers) and Severn Trent Water (the local water company). These two key partners' roles and responsibilities with regards local flood risk management are set out later in this document.

1.1.2 The Local Strategy provides an overview and assessment of local flood risk, and sets out objectives and processes as to how Solihull Council will manage and reduce this risk. In some instances, individuals, communities and businesses will be best placed to reduce the impacts of flooding and the Local Strategy will help them to understand flood risk and the action they can take.

1.1.3 To ensure that the Local Strategy remains the key source of information for all elements of local flood risk management, it will be monitored and reviewed on a regular basis to ensure that the objectives are being delivered and are still relevant.

1.1.4 The Action Plan (Appendix A) will be updated on an annual basis or after a significant flood event so that any newly identified actions are included and considered.

1.1.5 A Strategic Environmental Assessment (SEA) has also been produced by WSP on behalf of Solihull Council and will be available online alongside the Local Strategy. The SEA is a systemic process for evaluating the environmental effects of plans and programmes to ensure that environmental issues are integrated and assessed at the earliest opportunity in the decision-making process, and that sustainable development is at the heart of the plan-making process.

2 Vision and Aims

2.1 Vision

2.1.1 The aims and aspirations of Solihull Council with regards to the management of local flood risk within the Borough are embodied in the following vision statement:

To mitigate the risk and impact of flooding on the built and natural environment.

2.2 Aims

2.2.1 In delivering the vision of the Local Strategy, a number of aims have been formulated, namely:

- Improve awareness and communication of flood risk to enable communities to prepare for flood events, thereby reducing the need for emergency action;
- Ensure that new development is not at risk of flooding and does not create or exacerbate existing flooding or drainage issues;
- Improve our knowledge and understanding of existing assets and flooding hotspots;
- Develop holistic plans to reduce existing flood risk to property and infrastructure from all sources including highway drainage;
- Work in partnership with other organisations and local communities to deliver sustainable approaches to flood risk management;
- Maximise viable funding opportunities at a national, regional and local level to deliver our action plan; and
- Through the management of flood risk, maximise opportunities to improve water quality and enhance biodiversity wherever possible.

3 Context

3.1 Solihull Borough

3.1.1 The Borough of Solihull is located to the east of the West Midlands Conurbation. The Borough is bordered by the administration areas of Birmingham City Council, Warwickshire County Council, Worcestershire County Council and Coventry City Council. Solihull is at the heart of the national rail and motorway network with direct rail services to London and has excellent access to other regions in the UK through the M42, which links the Borough to the M6 and the M40 to the north and south respectively.

3.1.2 Outside of the major urban areas, the majority (approximately two thirds) of the Borough is countryside and designated as Green Belt, which separates the West Midlands conurbation from surrounding settlements. This vital strategic gap between Solihull and Coventry is known as the Meriden Gap. This area is predominantly rural, characterised by a series of settlements, historic villages, hamlets, scattered farmsteads and dwellings set within attractive countryside.

3.1.3 The Borough is covered by a number of Main River catchments, including the River Blythe, the River Cole, Ravenshaw Brook, Shadow Brook, Hollywell Brook, Low Brook, Kingshurst Brook and the Mount Brook. A number of Ordinary Watercourses also flow through the Borough including the Alder Brook, Cuttle Brook, Pickford Brook, Hatchford Brook and numerous unnamed watercourses. A map of the larger watercourses in the Borough can be seen in Figure 1 below.

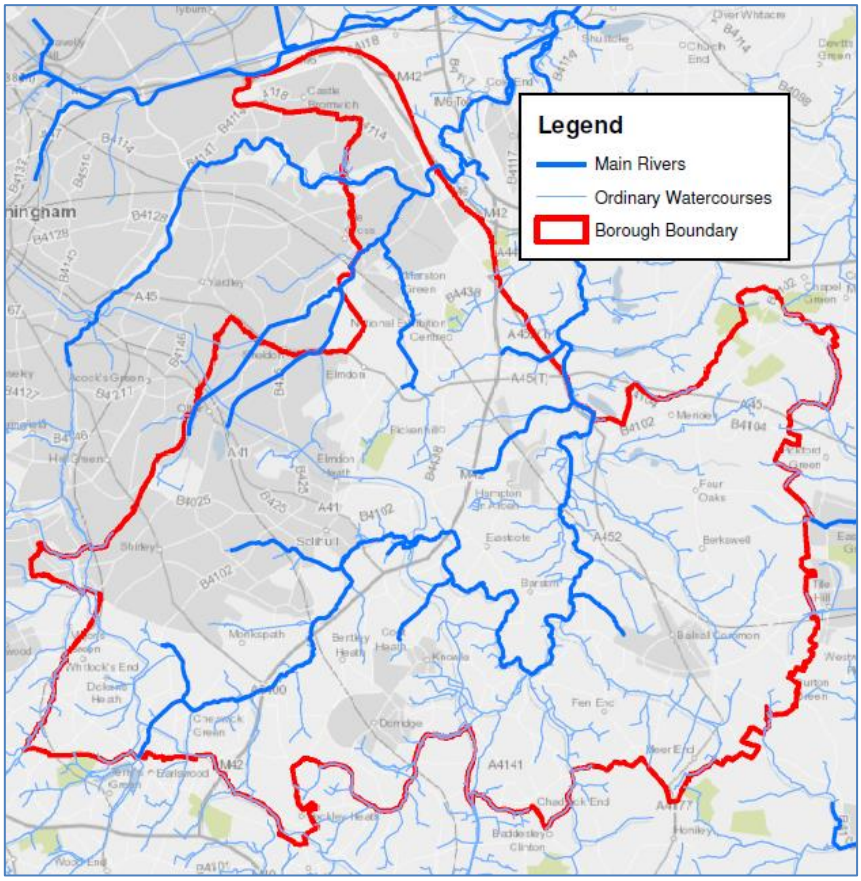


Figure 1 - Watercourses in the Borough

3.1.4 The general topography of the Borough is that there are higher elevations at the western and eastern boundaries which generally slope towards the River Blythe. The River Blythe flows into the southwest boundary of the Borough at Earlswood Lakes flowing northeast across the Borough before turning and flowing in a south-easterly direction at Henwood Mill. The river once again turns sharply at Temple Balsall and flows north. The second significant watercourse within the Borough is the River Cole, which enters the Borough in the Shirley West ward and flows in an easterly direction and intersects the north of the Borough at Meriden Park.

3.1.5 The underlying geology of the Borough predominantly consists of sedimentary rocks made up of mudstones, siltstones and sandstones. The superficial deposits across the Borough vary, with glacial till, drift deposits from the breakdown of the underlying geology, and alluvium all present.

3.1.6 Soils in the Borough are predominantly loamy and clay rich, which generally impede infiltration and are expected to be seasonally wet. There are also significant areas of naturally wet loamy soils, where the water table is expected to be very close to the ground surface. Floodplain soils are also found which are associated with the alluvium deposited during flood events.

3.2 National Legislation, Regulations, Policies and Plans

3.2.1 The link between Flood Risk Management Strategies, various EU directives, other relevant plans and the planning system can be seen in Figure 2.

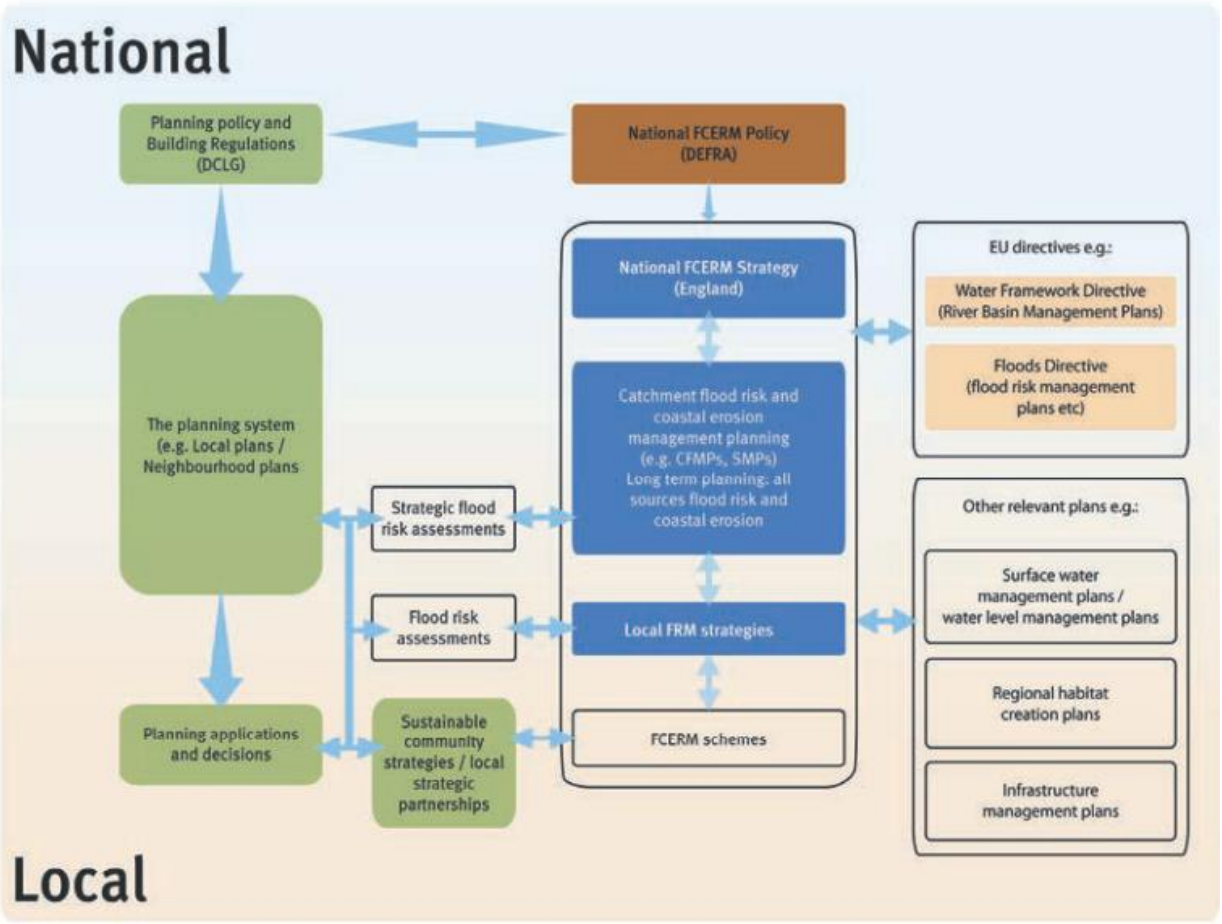


Figure 2 - Summary of the relationship between national and local flood and coastal erosion risk management strategies and plans (taken from the National Flood and Coastal Erosion Risk Management Strategy for England)

Flood Risk Regulations (2009)

3.2.2 The Flood Risk Regulations 2009 came into force on 10th December 2009, and transposed the EU Floods Directive into UK law. The key provisions of the Regulations are the preparation of:

- Preliminary Flood Risk Assessments (PFRA's) – This involves collecting information on past flood events from surface water, groundwater and ordinary watercourses, and identifying where significant numbers of people are at risk both now and in the future (these are termed Indicative Flood Risk Areas);
- Flood Hazard and Flood Risk Maps – Where areas have been identified within the PFRA as being an indicative flood risk area hazard, Flood Risk Maps were required to be produced;
- Flood Risk Management Plans – The final stage is for the production of a Flood Risk Management Plan for the indicative Flood Risk Areas by 22nd December 2015.

3.2.3 The Flood Risk Regulations gave responsibility for the production of these to:

- The Environment Agency for Main Rivers and reservoirs;
- LLFA's for all other forms of flooding (excluding sewer flooding which is not caused by rainfall).

Flood and Water Management Act (2010)

3.2.4 The Flood and Water Management Act (FMWA) 2010 was initiated and implemented following Sir Michael Pitt's review of the 2007 floods. The Pitt Review examined how to reduce both the risk and impact of flooding, and the effectiveness of emergency response teams.

3.2.5 The FWMA 2010 sets out a more comprehensive way of managing flood risk for people, homes and businesses. It helps to safeguard community groups from unaffordable rises in surface water drainage charges and protects water supplies to the consumer.

3.2.6 The FWMA 2010 specifies a number of 'risk management authorities', which for Solihull are as follows:

- The Lead Local Flood Authority (LLFA), Solihull Council;
- The Environment Agency;
- The local water company, Severn Trent Water;
- The highway authority, Solihull Council.

3.2.7 Under the Act all authorities have the following new responsibilities:

- A duty to cooperate with and provide information to other risk management authorities;
- The ability to take on flood functions from another risk management authority when agreed by both sides.

3.2.8 In addition each risk management authority have specific roles and responsibilities. Roles and responsibilities for Solihull Council include:

- Development, maintenance, application and monitoring of a Strategy for Local Flood Risk Management in the jurisdiction of the LLFA;
- Strategic leadership of local risk management authorities. It is recommended that this is done through the formation of a local flood partnership between LLFA's and other risk management authorities;
- Powers to request information from any person in connection with the authority's flood risk management functions;

- A duty to investigate and publish reports on flooding incidents in its area (where appropriate or necessary) to identify which authorities have relevant flood risk management functions and what they have done or intend to do;
- A duty to maintain a register of structures or features which have a significant effect on flood risk in their area, in the view of the lead local flood authority;
- Power to do works to manage flood risk from surface water runoff or groundwater;
- Power to designate structures and features that could affect flooding and are considered to be significant when assessing local flood risk;
- A duty to establish a Sustainable Drainage Systems (SuDS) Approval Body (SAB) with responsibility for approval of all drainage plans and the adoption and maintenance of SuDS that serve more than one property in new developments. However Government have recently removed this duty as surface water drainage for new development has been implemented through changes to the planning policy and guidance. This has remove the need for a standalone SAB, and Local Planning Authority (LPA) (Solihull Council) is responsible for approving drainage proposals for new development in line with national guidance. The LPA, will seek guidance on flood risk from both the Environment Agency and the LLFA, who are a statutory consultee for surface water drainage, further elements may be added to this in the future.
- Decision-making responsibility for whether works on ordinary watercourses by third parties that may affect water flow can take place;
- A duty to exercise flood management functions in a manner consistent with the National Strategy;
- A duty to aim to contribute towards the achievement of sustainable development in the exercise of flood or coastal erosion risk management functions, and to have regard to any ministerial guidance on this topic.

National Flood and Coastal Erosion Risk Management Strategy for England (Environment Agency, 2011)

3.2.9 The National Flood and Coastal Erosion Risk Management Strategy for England (referred to from here as the National Strategy) sets out the government's plans to ensure that flooding and coastal erosion risks are well-managed and co-ordinated, so that impacts can be minimised.

3.2.10 The Local Strategy is consistent with the National Strategy and adheres its guiding principles:

- Community focus and partnership working – engaging the community so that there is a better understanding of the risks associated with flooding, and working with other partners to achieve outcomes;
- A catchment based approach – thinking of the wider catchment and upstream/downstream impacts on neighbouring LLFAs;
- Sustainability – schemes should take account of predicted climate change, and enhance the natural environment where possible;
- Proportionate, risk-based approaches – the Local Strategy should focus resources on where it will have the greatest benefits;
- Multiple benefits – bringing economic, environmental and social improvements where possible;
- Beneficiaries should be encouraged to invest in local flood risk management – alternative sources than government funds should be investigated as part of the Local Strategy.

National Planning Policy Framework (Department for Communities and Local Government, 2012)

3.2.11 The National Planning Policy Framework (NPPF) is the Government's strategy for planning in England. It states that "inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere".

3.2.12 The NPPF puts a strong emphasis on Local Plans and localism and therefore the Local Strategy helps to underpin this central framework by providing a strong steer on flood risk management within a Borough wide (i.e. local) setting.

3.3 Regional Strategies and Plans

River Humber Basin District: River Basin Management Plan (Environment Agency, 2009)

3.3.1 The Humber River Basin includes the Tame, Anker and Mease sub-catchment, which Solihull principally falls within. Although the River Basin Management Plan (RBMP) focuses mainly on pollution measures and water quality, due to the nature of some surface water flooding issues there are some crossovers. For example, in times of flood, foul water can enter the surface water network (as mentioned in the River Trent CFMP) and have a negative impact on the water quality of the Tame, Anker and Mease sub-catchment.

3.3.2 Two key actions for this sub-catchment are:

- 'Improve sewage treatment works at a number of locations to reduce the levels of phosphate';
- 'Target pollution prevention campaigns around industrial areas in the urban areas, particularly around Birmingham and the Black Country'.

3.3.3 The River Humber RBMP is being revised and is currently out for consultation.

River Trent Catchment Flood Management Plan (Environment Agency, 2010)

3.3.4 The vast majority of the Borough drains to the River Trent (through the River Blythe or River Cole). The Catchment Flood Management Plan (CFMP) for this area considers all types of inland flooding, from rivers, ground water, surface water and tidal flooding within the catchment.

3.3.5 The CFMP highlights the risk of surface water flooding within Birmingham and the Black Country (sub-area 10, in which part of Solihull is located) and outlines a number of actions to help improve flood risk management. Sub area 10 is identified to be "of moderate to high flood risk where we can generally take further action to reduce flood risk".

3.3.6 A number of proposed actions have been developed as part of the CFMP, with the most relevant of these to Solihull[1] being:

- 'Provide a more accurate and community focused flood warning service';
- 'Reduce the incidence of foul water flooding by involving Severn Trent Water more in flood risk management';

[1] Taken from page 22, specific location actions not included.

- ‘Investigate and promote opportunities to create green corridors along watercourses through Birmingham and the Black Country’;
- ‘Produce and implement an integrated urban drainage strategy’;
- ‘Identify locations where flood storage ponds or wetland areas could be developed within the urban areas, with associated habitat creation’;
- ‘Produce an integrated flood defence asset management strategy’.

3.3.7 The rural eastern part of the Borough is located within the Mid Staffordshire and Lower Tame sub-area (sub-area 6). The stated policy for the sub-area is that it is an area “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”.

3.3.8 Most of the actions reported are more relevant to the River Tame, rather than its headwaters, but the most relevant of these to Solihull are listed below[2]:

- ‘Provide a more accurate and community focused flood warning service’;
- ‘Carry out a feasibility study to identify and assess locations for river restoration or improvements’;
- ‘Identify locations where flood attenuation ponds or wetland areas could be developed with associated habitat improvement or creation’;
- ‘Work with aggregate companies and the mineral and waste authorities to prepare a plan identifying current and future opportunities to create restoration that benefits both wildlife and flood risk management’.

3.4 Local Strategies and Plans

The Solihull Strategic Flood Risk Assessment Level 1 (Halcrow, 2008)

3.4.1 The Strategic Flood Risk Assessment (SFRA) for the Borough was published in January 2008. It consisted of a Level 1 (qualitative) analysis in accordance with Planning Policy Statement 25 (PPS 25) which was the relevant legislation at that time.

3.4.2 The purpose of the SFRA was to assess and map flood risk from groundwater, surface water, sewer and river sources, taking into account future climate change predictions, and where possible, use this as an evidence base to locate future development in low flood risk areas.

3.4.3 In addition, the SFRA:

- Provided a clear set of flood risk maps for the Borough, which included fluvial and other sources of flooding;
- Undertook a review of flood warning systems and flood risk management measures, providing recommendations where appropriate;
- Considered planning policy and existing strategies for managing flood risk;
- Set objectives for spatial planning, site design, SuDS, enhancing and restoring the river corridor, flood alleviation schemes, flood awareness and emergency planning;
- Specified development control policies and provided guidance for developers for different fluvial flood zones specified by the Environment Agency’s Flood Map;
- Presented guidance for the application of the Sequential Test;

[2] Taken from page 23, specific location actions not included.

- Presented guidance for the application of SuDS in developments.

Solihull Strategic Flood Risk Assessment Level 2

3.4.4 The Solihull Strategic Flood Risk Assessment Level 2 provides a refined assessment of flood risk to five strategic sites, four of which (at the time of writing) have now been granted outline or full planning permission. The sites considered within this assessment are:

- Aqueduct Road, Solihull Lodge
- Land at Braggs Farm, Dickens Heath,
- Land at Cleobury Lane, Dickens Heath
- Bishop Wilson School and St Andrew's Scout Hut, Pike Drive, Chelmsley Wood
- Conway Road, Fordbridge

River Cole Local Flood Risk Management Plan (Atkins, 2010)

3.4.5 This collaborative report on behalf of Solihull Council and Birmingham City Council was produced to better understand the flood risk associated with the River Cole. This was done using an existing hydraulic model and developing it further to include a two-dimensional component.

3.4.6 The study predicted flooding to the area around Nethercote Gardens during a 1 in 30 year event with an additional 22% of properties inundated for a 1 in 100 year event.

3.4.7 This report suggested that Combined Sewer Overflows (CSOs) contribute heavily to both the flows and resultant water quality within the River Cole.

3.4.8 Options were modelled for reducing flood risk but showed that conventional storage alone may not allow properties to be removed from the floodplain for 1 in 100 year storm. Additionally, the cost of the option which would provide the most benefits (in terms of properties removed from the flood plain) was too high to attract sufficient funds without significant private contributions under the current funding mechanism (Section 7.2). Solihull Council and Birmingham City Council are currently considering approaches to enable sufficient funding to be obtained.

Solihull Preliminary Flood Risk Assessment (WSP, 2011)

3.4.9 The Solihull Preliminary Flood Risk Assessment (PFRA) was produced in compliance with the Flood Risk Regulations 2009 to provide high level screening for historic and potential future flooding from surface water, groundwater and ordinary watercourses. PFRA's were produced for every LLFA, based on existing information including historical flood records, flood mapping produced by the EA and other plans described previously.

3.4.10 The 'Local Significant Harmful Consequence' criteria has been developed as:

- Internal flooding to 5 or more residential properties, or;
- Flooding to 2 or more business properties, or;
- Flooding to 1 or more items of critical infrastructure, or a transport link impassable for in excess of 10 hours.

3.4.11 When a flood event occurs which falls within this criteria, a formal flood investigation (as required by Section 19 of the FWMA) needs to be undertaken by Solihull Council (as LLFA), with the results made publically available. For flood incidents outside this threshold an informal investigation may be undertaken and reported on.

3.4.12 The PFRA lists significant historical flooding, in particular in July 2007, where areas around Nethercote Gardens and Cheswick Green were affected. The consequences of these floods exceeded the flooding significance criteria and were therefore recorded as 'past floods with potential for significant consequences'. Additional information in Appendix B

3.4.13 Flooding of the area around the Airport, National Exhibition Centre (NEC) and the A45 was also highlighted as 'flooding with possible significant consequence' due to the national importance of the infrastructure.

3.4.14 The future flood risk within Solihull was identified as 'significant' in some parts; the western urbanised areas of the Borough are considered to be more at risk of floods due to their built up nature with flooding extents shown on the predicted surface and groundwater maps.

3.4.15 The PFRA states that the locally agreed surface water information is the Flood Map for Surface Water (FMfSW) for a 1 in 200 year predicted storm. However, this mapping has now been superseded by the Environment Agency's Risk of Flooding from Surface Water map. The Risk of Flooding from Surface Water map suggests that 1,553 properties sit within the 1 in 30 year surface water flood outline.

Solihull Flood Risk Sequential Test of Local Plan Emerging Sites (Solihull Council, 2012)

3.4.16 The NPPF and supporting guidance indicates that a sequential risk-based approach should be taken when determining the suitability of land for development. The Sequential Test should be applied to land being considered for development to demonstrate that there are no reasonably available sites in areas with a lower probability of flooding that would be appropriate for the proposed use. If it is not possible for development to be located in zones of lower probability of flooding the Exception Test should be applied.

3.4.17 The Sequential Test was applied to the emerging sites of the Draft Local Plan in June 2012. Each development location has being assessed appropriately with reference to a number of different sources of flood risk information.

3.4.18 Following the application of the Sequential Test, the results identified where the Exception Test will be required. The Exception Test should be applied when the Sequential Test alone cannot justify development at a particular site, but development in that location is necessary for wider sustainability reasons, or where restrictive national designations or other constraints prevent the availability of sites in lower risk areas.

3.4.19 For the Exception Test to be passed:

- It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, as informed by the SFRA; and
- If a site-specific flood risk assessment is necessary, it must demonstrate that the development will not increase flood risk at the site or elsewhere, and be safe for the development lifetime The FRA should also demonstrate where existing flood risk will be reduced, where possible, .

3.4.20 Both the Sequential and Exception tests have to be passed for development to be allocated or permitted.

The Water Cycle Study for Solihull (Solihull Council, 2012)

3.4.21 A Water Cycle Study was prepared by Solihull Council to review the water supply and waste water infrastructure within Solihull, in relation to future development.

3.4.22 The study concluded that proposed housing developments throughout Solihull will have a low to medium impact on sewerage infrastructure, and that there is sufficient capacity at sewage treatment works to accommodate the predicted increase in flows.

Solihull Local Plan (Solihull Council, 2013)

3.4.23 The purpose of the Local Plan is to set out the long-term spatial vision for how towns, villages and countryside will develop and change over the Plan period (2011-2028), and how this vision will be delivered through a strategy for promoting, distributing and delivering sustainable development and growth.

3.4.24 Solihull Council approved the Solihull Local Plan on 3rd December 2013. The Local Plan replaces the policies of the Solihull Unitary Development Plan 2006 and is now the Council's statutory development plan and the starting point for planning decisions. The most relevant policy to the Local Strategy is P11 (Water Management), which states:

> *"All new development should have regard to the actions and objectives of appropriate River Basin Management Plans in striving to protect and improve the quality of water bodies in and adjacent to the Borough, including the Rivers Blythe and Cole and their tributaries. Developers shall undertake thorough risk assessments of the impact of proposals on surface and groundwater systems and incorporate appropriate mitigation measures where necessary. The Council will expect developers to demonstrate that all proposed development will be served by appropriate sewerage infrastructure and that there is sufficient sewage treatment capacity to ensure that there is no deterioration of water quality, or that the delivery of any development will not be delayed by the need for additional water treatment provision.*
>
> *The Council recognises the need for water efficiency in all new development. Developers shall demonstrate the highest possible standards of water efficiency through the use of water efficient fittings and appliances, and where appropriate, recycling of potable, grey water and rainwater in order to minimise consumption.*
>
> *All new development shall incorporate sustainable drainage systems, unless it is shown to be impractical to do so. Developers shall ensure that adequate space is made for water within the design layout of all new developments to support the full use of sustainable drainage systems, and shall demonstrate that improvements to the water environment will be maximised through consideration of a range of techniques. Wherever possible, sustainable drainage systems will be expected to contribute towards wider sustainability considerations, including amenity, recreation, conservation of biodiversity and landscape character, as well as flood alleviation and water quality control.*
>
> *Developers shall explore opportunities to contribute towards the objectives of relevant Catchment Flood Management Plans. Wherever possible, development should promote the reduction of flood risk by seeking to reinstate the natural floodplain, the de-culverting of watercourses and the limiting of surface water runoff to green field rates via the use of sustainable drainage techniques. On all development sites larger than 1 hectare, surface water discharge rates shall be limited to the equivalent site specific Greenfield run off rate. Developers will be expected to demonstrate that the layout and design of a development takes account of the surface water flows in extreme events so as to avoid flooding of properties, both within and outside the site. Applications for new development where there is a flood risk issue should be accompanied by a site flood risk assessment. Developers are encouraged to secure reduction of flood risk by the provision or enhancement of green infrastructure, wherever possible.*
>
> *Existing flood defence infrastructure will be protected and development that would compromise the flood defence function will be permitted only if it is demonstrated through a flood risk assessment that the risk both within and outside the site, and to sites further downstream is not increased.*

New development will not normally be permitted within areas at risk of flooding. Where it is clearly demonstrated that there are no other viable sites at lower risk of flooding, consideration will be given to development in such locations, providing that it is designed to be safe from the effects of flooding and will minimise flood risk on the site and reduce risks elsewhere."

3.4.25 Paragraph 10.6.6 of the Local Plan states that:

"Developers will be expected to review and pay due regard to the recommendations included within the Local Flood Risk Strategy produced by the Lead Local Flood Authority. The Strategy may highlight opportunities to work in partnership with the Environment Agency and the Lead Local Flood Authority to contribute to the reduction of flood risk to new development and to third party land."

Solihull Multi Agency Flood Plan (Solihull Council, 2014)

3.4.26 The Multi Agency Flood Plan (MAFP) sets out the roles, responsibilities and arrangements for Council Officers and other organisations when a flood event occurs or is predicted.

3.4.27 In particular the plan indicates the areas likely to be most at risk, the triggers for activating the plan, the responses to be undertaken, the responsibilities during recovery after an event and general advice to the public.

3.4.28 This document is used in conjunction with the Emergency Planning Manual owned and maintained by Solihull Council's Highways Team.

Solihull River Corridor Improvement Plan (EA, 2014)

3.4.29 The Solihull River Corridor Improvement Plan was completed by the EA in accordance with Solihull Council in February 2014.

3.4.30 The Solihull River Corridor Improvement Plan identifies where watercourses within Solihull can be improved for the benefit of people and wildlife. Identified actions have been recognised for the River Cole, River Blythe, Hatchford Brook and the Kinghurst Brook.

4 Working in Partnership

4.1.1 Solihull Council, the Environment Agency and Severn Trent Water have been working in partnership for a number of years with regards to local flood risk management. This has included regular partnership meetings, joint flood investigations and knowledge sharing.

4.1.2 The Local Strategy builds on this good relationship by listing continuing partnership working as one of the objectives (Objective 6).

4.2 Flood Risk Management Authorities

4.2.1 The causes and management of flooding can be complex and therefore responsibility frequently falls across many organisations. Consequently a partnership approach is crucial for effective flood risk management. The key partners are described by FWMA 2010 as 'risk management authorities' who have specific roles and responsibilities. These key partners are:

- Solihull Council as the LLFA and the Local Highway Authority;
- The Environment Agency;
- Severn Trent Water as the Borough's Water and Sewerage Company.

4.3 Other Partners and Stakeholders

4.3.1 There are a number of other internal and external partners and stakeholders with an interest in or who could make a contribution to local flood risk management.

4.3.2 This includes a number of functions within Solihull Council such as Policy and Spatial Planning and Development and Regulatory Management. External bodies could include:

- Parish and Town Councils;
- Developers, who will have a vital role in delivering the objectives of the Local Strategy;
- The Trent Regional Flood and Coastal Committee, which has been set up by the Environment Agency to approve programmes of work for their areas and raise local levies to provide additional funding;
- Network Rail;
- Emergency services;
- Canal and River Trust;
- Natural England;
- Wildlife Trusts and the Royal Society of the Protection of Birds (RSPB);
- Flood Action Groups and the National Flood Forum;
- The Highways Agency; and
- Significant landowners/employers.

4.4 Roles and Responsibilities

4.4.1 A summary of the lead responsibilities for planning flood risk management are as follows):

The Lead Local Flood Authority – Solihull Council

4.4.2 As the Lead Local Flood Authority Solihull Council have the following powers under the Flood and Water Management Act 2010:

- Powers to do works to manage flood risk from surface water runoff, groundwater and ordinary watercourses;
- Powers to designate structures and features that affect flooding;
- Powers to request information from any person in connection with the authority's flood risk management functions.

4.4.3 Responsibilities have also been placed upon LLFA's through the FWMA 2010 as specified in Table 1 below. Further information is included in the Appendix specified.

Table 1 – Solihull Council's responsibilities with regards to local flood risk management as Lead Local Flood Authority

Responsibility	Description	Appendix
Recording flood incidents	Responsible under the FWMA 2010 to investigate and record flood incidents. The decision to investigate an incident lies with the LLFA. The aim of a Flood Investigation Report (under Section 19 of the FWMA 2010) is to bring together all useful information together in one place, providing an understanding of why the incident occurred as it did and outline potential long-term solutions and actions. Investigations will involve consultation with the relevant risk management authorities, landowners and private organisations involved as necessary.	C
Asset register	Flood Risk Assets are structures or features which are considered to have a significant effect on flood risk. LLFA's are required to keep both an asset record (for use by risk management authorities) and an asset register (available for inspection by the public at all reasonable times).	D
Designation of assets	The Flood and Water Management Act has designated the LLFA and the Environment Agency as 'designating authorities'. This allows them to 'designate' features or structures where the following four conditions are met: ■ The designating authority thinks the existence or location of the structure or feature affects a flood risk; ■ The designating authority has flood risk management functions in respect of the risk which is affected; ■ The structure or feature is not designated by another authority; and ■ The owner of the structure or feature is not a designating authority. If an asset becomes 'designated' its owner cannot alter or remove it without first consulting the designating risk management authority. The aim of designating flood risk assets is to safeguard against unchecked works which could increase flood risk in the area. Designating features is not something that should be done regularly but only when there are concerns about the asset. An individual may appeal against a designation notice, refusal of consent, conditions placed on consent or an enforcement notice.	D

Responsibility	Description	Appendix
Regulation of Ordinary Watercourses	In April 2012, the regulation of ordinary watercourses passed over to LLFAs to ensure that flood risk is managed appropriately and at a local level. The regulation consists of two elements: ■ Issuing of consent for any changes to ordinary watercourses that might obstruct or alter the flow of an ordinary watercourse ■ Enforcement action to rectify unlawful and potentially damaging work to a watercourse. Riparian owners will now have to apply for consent for works which may affect the flow of water within an ordinary watercourse, which include ditches or streams that are not designated as Main River. This is known as Land Drainage Consent.	E
Planning and Drainage Consultee	The Government have recently reviewed how drainage systems proceed through the planning process. Solihull Council as the Lead Local Flood Authority is a statutory consultee on applications concerning surface water drainage. Solihull Council will also undertake an active role in providing comment and input to planning applications on matters concerning flood risk and drainage.	-

The Environment Agency

4.4.4 The Environment Agency has national and local roles with regards to flood risk management. At a national scale the FWMA 2010 requires the Environment Agency to publish a national strategy for flood risk management in England and Wales. The National Strategy has been used by LLFAs to influence Local Strategies to ensure consistency in flood risk management across the country.

4.4.5 The Environment Agency's National Strategy sets out the following actions:

- Use Strategic Plans such as the Catchment Flood Management Plan (CFMP) to set the direction of flood risk management;
- Support the creation of Flood Risk Regulation by collating and reviewing the assessments, plans and maps that Lead Local Flood Authorities produce;
- Provide data, information and tools to inform government policy and aid risk management authorities in delivering their responsibilities;
- Support collaboration, knowledge-building and sharing of good practice including provision of capacity-building schemes;
- Manage the Regional Flood and Coastal Committees (RFCC's) and support their decisions in allocating funding for flood defence and flood resilience;
- Report on and monitor flood and coastal erosion risk management; and
- Provide grants to risk management authorities to support the implementation of their flooding or environmental powers.

4.4.6 The Environment Agency also have responsibilities at a local scale, which include emergency planning, advising on planning applications where appropriate, and managing flood risk from Main Rivers and reservoirs. These responsibilities are set out in Table 2 below.

Table 2 – The Environment Agency's responsibilities with regards to local flood risk management

Responsibility	Description
Emergency planning	Contribute to the development of multi-agency flood plans. These are developed by local resilience forums to help those responding to a flood work together efficiently. To help provide better warnings, the Environment Agency also works with the Met Office in the Flood Forecasting Centre.
Planning applications	In 2006 the Environment Agency were made a statutory consultee for all planning applications where there is a risk of flooding and for any site greater than 1 hectare in size. The Environment Agency provides advice to LPA's on flood risk and helps to technically interpret Flood Risk Assessments submitted by developers. However, given the increased roles and responsibilities placed on LLFAs, the reviewing and conditioning of planning applications has become increasingly shared and as of April 2015, the Environment Agency will no longer provide advice to Local Planning Authorities on surface water drainage issues (this role transferring to the LLFA – Solihull Council).
Main Rivers	The Environment Agency has permissive powers to carry out maintenance and improvement works on Main Rivers. This can include any structure or appliance for controlling or regulating the flow of water into or out of the channel. However, the overall responsibility for maintenance of Main Rivers lies with the riparian owner. The Environment Agency can bring flood defence schemes forward through the RFCCs, and will work with LLFAs and local communities to shape schemes which respond to local priorities. The Environment Agency are also the regulating authority with regards to consenting works carried out by others, in, under, over or within 8 metres of a Main River (or Ordinary Watercourse where the scheme promoters are the LLFA).
Reservoirs	The Environment Agency enforces the Reservoirs Act 1975, (due to be amended when FWMA 2010 is fully implemented), which is the safety legislation for reservoirs in the UK. The Environment Agency is the Enforcement Authority in England for reservoirs that are greater than 25,000m³. As the Enforcement Authority the Environment Agency must ensure flood plans are produced for specified reservoirs. However the responsibility for carrying out work to manage reservoir safety lies with the reservoir owner/operator.

The Local Highway Authority – Solihull Council

4.4.7 As a unitary authority Solihull Council is the Highway Authority for the Borough and has the following responsibilities under other legislation:

- Responsibility to maintain highways, including ensuring that highway drainage systems are clear and that blockages are cleared. This is a duty under the Highways Act and is currently undertaken by the Council's in house tanker services team;
- Powers to deliver works that they consider necessary to protect the highway from flooding. These works can either be on the highway itself or on land which has been acquired by the Local Highway Authority in the exercise of highway acquisition powers;
- The Local Highway Authority may divert parts of watercourses or carry out any other works on any form of watercourse if it is necessary for the construction, improvement or alteration of the highway or provides a new means of access to any premises from the highway.

The Borough's Water and Sewerage Company – Severn Trent Water

4.4.8 Severn Trent Water has a number of roles and responsibilities with regards to local flood risk management. These are as follows:

- Planning the future development and maintenance of services;
- Ensuring their assets and systems are resilient to flood risk;
- Ensuring the required level of service can be maintained during a flood incident;
- Managing the risks of flooding from surface, foul and/or combined sewer systems;
- Maintaining the DG5 register – a list of properties at risk of flooding due to overloading of the sewerage network; and working towards reducing the risk;
- Working with developers and landowners to reduce the amount of rainfall entering sewers through the use of SuDS;
- Effectual drainage responsibility (duty to provide, maintain and operate systems of public sewers and works for the purpose of effectually draining their area of responsibility).

5 Assessment of Local Flood Risk in Solihull

5.1 Historical Flooding

Overview

5.1.1 The PFRA (WSP, 2011) included an analysis of historical flooding, which concluded that this has mainly been associated with Main Rivers which are the responsibility of the Environment Agency, rather than local flooding. However, the following information sets out historical flood events associated with Ordinary Watercourses, surface water and groundwater sources.

Ordinary Watercourse Flooding

5.1.2 Historic records of fluvial flooding are concentrated along the River Blythe and the River Cole. During 2007 a large rainfall event occurred, with an estimated frequency of 1 in 75 years, resulting in extensive flooding of both rivers. This resulted in the internal flooding of more than 20 properties, concentrated around Nethercote Gardens on the River Cole and Cheswick Green on the River Blythe (see Figure 3). Although the River Blythe is a Main River and is therefore not within the scope of the Local Strategy, the flooding of the River Blythe was worsened due to localised surface water and ordinary watercourse flooding.

5.1.3 Flooding in November 2012 occurred in Dickens Heath (Figure 4) resulting in the inundation of approximately 10 properties. This incident was believed to be due to a blockage of a culvert inlet, which has now undergone extensive improvement to reduce the risk of this reoccurring.

5.1.4 In addition, flooding occurred in the village of Meriden (see Figure 5) during the same storm event and was caused by high sediment loads blocking a trash screen and the backing up of flood water. This led to flooding of multiple properties.

Figure 3 - Main River flooding in July 2007 in Cheswick Green from the River Blythe

Figure 4 - Ordinary watercourse flooding in November 2012 at Dickens Heath due to a culvert inlet blockage

Figure 5 - Ordinary watercourse and surface water flooding in November 2012 at Meriden

Surface Water Flooding

5.1.5 There are multiple causes of surface water flooding including overland flows, inundation of the sewerage system and overtopping of drainage ditches. As such surface water flooding cannot be separated from ordinary watercourse flooding.

5.1.6 In Solihull, surface water flooding is most common on highways and agricultural land where the associated drainage network becomes overwhelmed. Surface water flooding has been the most significant flooding issue within the Borough, and has been particularly concentrated towards the west where the urban areas are located.

5.1.7 Surface water flooding can be caused by overland flow/surface water runoff and inundation of or blockages within drainage systems. There have been some localised incidents of property and highway flooding caused by this.

Groundwater Flooding

5.1.8 There are no confirmed records of groundwater flooding within the Borough. There has however been a recent increase of unsubstantiated reports of groundwater emergence beneath the floors of properties, particularly within the Shirley area. This may suggest that there has been a recent increase in the occurrence of groundwater flooding within Solihull.

Flooding from artificial sources

5.1.9 There are a number of canals and impounded water bodies within Solihull. There is only one record of flooding from an artificial source, namely a breach of the Grand Union Canal in Knowle. This was attributed to a farmer excavating the toe of the embankment, which caused a slope failure.

5.2 Present Day Flood Risk

5.2.1 No new flood risk analysis for the Borough has been undertaken as part of the Local Strategy, which has used existing information to document present day and future flood risk.

Ordinary Watercourse Flood Risk

5.2.2 The Environment Agency's online Flood Map is the best source of information for fluvial flooding. Most of the Flood Zones shown online are associated with Main Rivers, but the flood zones associated with many ordinary watercourses, including the River Cole, have been mapped. However, it should be noted that the SFRA suggests that the flood map appears to be mis-aligned in places and should therefore be used with caution.

5.2.3 Given the frequent updates of the online mapping the Local Strategy does not replicate this information as it can easily be found on the Environment Agency's website – https://www.gov.uk/government/organisations/environment-agency

5.2.4 In recent years a number of ordinary watercourses have flooded causing property inundation. This has included in and around Meriden village, and to the south east of Dickens Heath. Often flood events from ordinary watercourses are associated with poor maintenance of culverts and/or trash screens leading to blockages and subsequent flooding.

5.2.5 The number of properties at risk from ordinary watercourse flooding is difficult to estimate given that not all potential sources of risk have been included in any one mapping study.

Surface Water Flood Risk

5.2.6 Locally agreed surface water information was previously based on the 1 in 200 year event predicted by the Flood Map for Surface Water (FMfSW). However, this mapping has now been superseded by the Environment Agency's Risk of Flooding from Surface Water Map. This map identifies areas at risk from the 1 in 30 year, 1 in 100 year and 1 in 1000 year events.

5.2.7 Property counts from this latest source of information suggest that 1,553 properties sit within the 1 in 30 year surface water flood outline as shown in Table 3.

Table 3 - Property counts based on the updated Flood Map for Surface Water

Ward	Properties within the 1 in 30 year flood outline (3.3% annual chance)	Properties within the 1 in 100 year flood outline (1% annual chance)	Properties within the 1 in 1000 year flood outline (0.1% annual chance)	Total number of properties in ward
Bickenhill	62	225	883	5825
Blythe	89	217	812	5594
Castle Bromwich	96	271	836	5034
Chelmsley Wood	76	198	803	5942
Dorridge and Hockley Heath	142	304	947	4696
Elmdon	105	312	1050	5333
Kingshurst and Fordbridge	56	222	852	5624
Knowle	67	190	687	4720
Lyndon	110	378	1212	5730
Meriden	154	321	852	5426
Olton	121	390	1235	5542
Shirley East	57	209	967	4893
Shirley South	78	304	1124	5665
Shirley West	79	234	1116	5417
Solihull	82	232	768	5308
Smith's Wood	94	254	935	5656
St Alphege	85	252	939	5959
Total for whole Borough	**1,553**	**4,512**	**16,005**	**92,364**

5.2.8 Table 3 demonstrates that there are a number of locations where surface water flood risk is significant, particulary in Dorridge and Hockley Heath and in Meriden. However this should be considered against the total number of properties.

5.2.9 However as stated previously, this mapping does not take into account the influence of drainage systems, and should be considered to be a worst case scenario. This highlights the importance of maintaining key assets.

Groundwater Flood Risk

5.2.10 The PFRA (WSP, 2011) mapped groundwater flood risk based upon the British Geological Survey's susceptibility maps. These maps show susceptibility in Solihull to be generally due to the underlying geology. Areas with a high susceptibility include parts of Olton, areas immediately north east of the airport, areas around the lakes to the south-east of Hampton in Arden, and north Monkspath.

5.3 Flood Risk and Climate Change

5.3.1 It is now well recognised that global climate change is occurring, but the difference to regional or local climates is less clear. In particular, the effect on local flood risk is not well understood, with very approximate figures for increases in rainfall, river flows, wind speed and wave heights provided in the Technical Guidance to the NPPF (Department for Communities and Local Government, 2012). This is shown in 4.

Table 4 – National precautionary sensitivity ranges as taken from Table 5 in the Technical Guidance to the NPPF.

Parameter	1990 to 2025	2025 to 2055	2055 to 2085	2085 to 2115
Peak rainfall intensity	+5%	+10%	+20%	+30%
Peak river flow	+10%	+20%		

5.3.2 The UK Government's most recent Climate Change Risk Assessment (CCRA) (Defra, 2012) gave a national picture of expected risks and opportunities arising from the changing climate. A summary of impacts to the West Midlands was also released to give a local assessment (West Midlands Climate Adaptation Partnership, 2012). Some of the relevant key findings include:

- Projected increases in precipitation are likely to increase the frequency and severity of river flooding events in the region, with over 21,000 residential and commercial properties at significant risk. There are also 1,700 sensitive infrastructure sites in flood risk zones including one hospital, over 300 power and gas stations, 43 care homes and 35 emergency response centres;
- Existing urban drainage systems will be put under pressure as projected increases in winter precipitation, compounded by population growth and development within the region, may lead to surface water flooding;
- Flooding is likely to cause extensive disruption to the regions transport network, power supplies and telecommunications as occurred during extensive flooding in the region during 2007. Such disruption could potentially have national consequences;
- Flooding is one of the major risks to agricultural land. In 2007, over 10,923 hectares of agricultural and farm land in the West Midlands (Severn and Avon catchments) was flooded causing £15.5 million in damage and costing on average £96,596 per farm. This was an exceptional event, but climate change predictions suggest that extreme events such as this are likely to occur more frequently;
- Increased incidences of flooding are likely to be associated with psychological stress for victims as a result of property damage and disruption, and may be associated with fatalities.

5.3.3 The quantification of climate change on 'local' flood risk is difficult and currently little work which is publically available has been done on modelling the impacts on surface water, groundwater and ordinary watercourse flooding. As this Strategy evolves and is reviewed it is hoped future work will add to the understanding of how climate change is likely to impact Solihull, which will then be communicated through future updates to this document.

6 Objectives

6.1 Introduction

6.1.1 The following objectives have been developed to ensure that the risk and impact of flooding on the built and natural environment in Solihull is mitigated. They have been formulated with reference to the Vision and Aims set out previously.

6.2 Objective 1 – Improving the understanding and communication of flood risk in Solihull

6.2.1 Historic flooding in Solihull has highlighted that the causes are often complex and can be from multiple sources. Therefore understanding flood risk solely from high level strategic work (such as the surface water flood maps) may not accurately portray actual flood risk.

6.2.2 Gaining a better understanding of flood risk in the Borough will be an on-going process but it is acknowledged that some issues are not well understood. Solihull is in a fortunate position in that flood risk is low overall, which means that localised flood risk hotspots can be better studied with the resources available.

6.2.3 With flood risk expected to increase due to climate change, greater understanding will enable Solihull to better mitigate against potential future problems and provide informed advice on allocated development.

6.2.4 Communication of risk to the local community in Solihull is key to ensuring people are aware of the risk they face, and can take appropriate action when necessary. Increasing awareness can be achieved through public consultation events, newsletters and online resources.

6.2.5 The Action Plan (Appendix A) demonstrates how this objective is being achieved. Some examples include:

- Preparation of the Preliminary Flood Risk Assessment (PFRA) and locally agreed surface water information in partnership with the Environment Agency. This gives an overview of the current level of understanding of flood risk in the Borough;
- Reviewing the Risk of Flooding from Surface Water Map in accordance with local knowledge and understanding. This process has improved the level of understanding of surface water flood risk at the local scale;
- Development of a Surface Water Management Plan (SWMP) to assess areas of high surface water flooding. This study will identify key flooding hotspots and assess potential measures for reducing these risks;
- The on-going recording of flood incidents and collation of historical flooding information. Flood Investigation Reports will help support the existing information already available and clarify areas at risk from flooding. They will also provide information on which Risk Management Authorities should be involved and potential mitigation measures;
- Engaging with key members of the community to gain information on flood risk issues in their local area. Those who have experienced flooding can provide valuable anecdotal evidence such as verbal recollections of localised flow routes and photographs of flood events which can enhance and verify other sources of flood risk information.

6.3 Objective 2 – Managing the likelihood and impacts of flooding

6.3.1 Flooding is a natural process and stopping it altogether is impossible. However, it is possible to manage the risk and reduce the impacts for Solihull.

6.3.2 Understanding, identifying and quantifying flood risk is the first step in managing and reducing the likelihood and impacts of flooding. Potential flood risk management schemes and funding opportunities will be explored to actively reduce the flood risk within the Borough.

6.3.3 Operation and maintenance of existing flood risk and drainage infrastructure is also important to ensure that the level of flood risk protection they provide does not reduce over time. Pro-active maintenance and repair of assets will be undertaken to ensure existing systems operate as required.

6.3.4 The Action Plan (Appendix A) demonstrates how this objective is being achieved. Some examples include:

- Producing a Local Strategy for Flood Risk Management (this document);
- Preparation of a pre flood action plan identifying inspections and works required at critical locations. This will improve the condition of drainage and flood risk assets in the Borough, increasing their ability to perform as required during flood events (Appendix F);
- Preparation of an asset register of structures or features which are likely to have a significant effect on flood risk. This will include information on the locations of features/structures, the role they play in local flood risk, their ownership and long term operation and maintenance;
- Development of an affordable and suitable flood asset maintenance regime based on local knowledge and risk. Without the required maintenance assets will not perform as required during flood events; and
- Development of a programme of flood mitigation schemes and initiatives which are likely to be funded through a combination of national government funding and local partnership contributions. This will create a pipeline of schemes to reduce flood risk in Solihull that are ready to be implemented as soon as funding is secured.

6.4 Objective 3 – Helping Solihull's citizens to manage their own risk

6.4.1 It is recognised that local flood risk management is most successful when the community are included in decision making, and feel a sense of ownership of the issues and solutions.

6.4.2 Increased community engagement also helps to mitigate the impacts of flooding as people at risk are more aware of and are more likely to plan for potential flooding. The Council are committed to improving public awareness of flooding and consulting them on local flood risk management issues.

6.4.3 Flood defence assets perform a key role in flood risk management and land drainage. It is therefore paramount that they are adequately maintained and any unnecessary construction or alteration is avoided.

6.4.4 The public need to be aware of the role that these features play and their responsibilities for maintaining them. However, public knowledge regarding maintenance responsibilities is typically poor, especially with regards to ordinary watercourses and riparian ownership.

6.4.5 Individuals who own land through which an ordinary watercourse flows are referred to as riparian owners under Common Law, and must ensure that water is able to flow freely through the section of

the watercourse on their land. Guidance on the rights and responsibilities of riparian owners is provided in the Environment Agency's document 'Living on the Edge' (Environment Agency, 2013).

6.4.6 The Action Plan (Appendix A) demonstrates how this objective is being achieved. Some examples include:

- Providing information about how citizens can minimise flood risk and protect themselves during flooding. Informed citizens are better able to prepare for flooding my making alterations to their property and preparing a personal flood plan;
- Provide information to riparian owners on their responsibility for watercourse maintenance and enforce maintenance as appropriate. Encouraging residents to accept and act upon their responsibilities will reduce the burden for enforcement and the chance of locally increased flood risk. Further information is in Appendix G;
- Giving local communities greater involvement in project design and delivery at an early stage of flood risk management schemes. Without community support development of flood risk schemes can be problematic with increased chances of delays caused by objections to planning applications or protracted negotiations with landowners. In addition local involvement can lead to opportunities for partnership funding;
- Support and work with community volunteer groups wherever possible. These groups can be encouraged to support the work of the Council through actions such as voluntary asset inspections, notification of developing flood risk issues and basic maintenance such as vegetation management;
- Advise and implement property level flood prevention schemes where appropriate as an alternative to larger scale capital flood defence schemes.

6.5 Objective 4 – Guiding appropriate development in Solihull

6.5.1 Flood risk is an intrinsic consideration in determining planning applications. Without careful masterplanning and appropriate mitigation measures, the location and type of development can heavily influence flood risk at a catchment level, and potentially increase flood risk downstream of the development. Flood risk should be considered at the pre-application stage for all development, and the relevant flood risk management authorities should be involved in these discussions.

6.5.2 The FWMA 2010 enabled Solihull Council as LLFA and LPA to positively influence development, to make it more sustainable and reduce flood risk both on and off site. Solihull Council are therefore committed to working with developers to produce developments where flood risk is minimal and there is a positive impact on the wider Borough.

6.5.3 One of the key ways of doing this is through planning policy, with Policy P11 of the Solihull Local Plan (see Section 3.2) being the most relevant. Additional reference is provided by the NPPF and the SFRA.

6.5.4 The NPPF is the key piece of National Planning Policy in relation to managing flood risk from new developments. The planning process at all stages should be informed by the Level 1 and Level 2 SFRA (when completed) which aims to:

- Provide evidence on flood risk to inform the planning process; and
- Aid the application of the Sequential Test.

6.5.5 The flood risk for individual developments should be informed by a detailed Flood Risk Assessment (FRA). A FRA must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its uses / users without increasing flood risk elsewhere, and where possible, will reduce flood risk overall.

6.5.6 The Action Plan (Appendix A) demonstrates how this objective is being achieved. Some examples include:

- Using available information on flood risk to identify development potential and steer growth towards areas of low flood risk. This will be undertaken through the review of planning applications with reference to relevant information on local flood risk, such as the SFRA and SWMP;
- Working within the planning process to create clear advice and direction to developers on flood risk and drainage;
- Ensuring that each development incorporates a strategy for the management and maintenance of surface water (e.g. SuDS) features along with any necessary flood risk management activities (e.g. developer funded schemes or through Section 106 agreements and/or the Community Infrastructure Levy) (See Section 7);
- Encouraging the use of SuDS in all developments, both new and existing, improving the way in which surface water runoff is managed; and
- Solihull Council as LLFA will support the LPA (through its role as a statutory consultee) in reviewing and approving, the surface water drainage (e.g. SuDS) aspects of planning applications.

6.6 Objective 5 – Improving flood prediction, warning and post flood recovery

6.6.1 The impacts of flooding can be minimised through improved flood prediction and warning. The two most important aspects of this are to better understand flood mechanisms and 'trigger' levels; and improving communication with local communities to convey flood warnings. If those at risk are forewarned they can take appropriate actions to minimise the danger to themselves and their properties.

6.6.2 After a flood event the speedy recovery of businesses and individuals is important for the health and wellbeing of those affected, and also the economic output in Solihull. Returning people to their homes will also minimise the Council's long term expenditure on disaster management, allowing funds to be directed to reducing risk.

6.6.3 The Action Plan (Appendix A) demonstrates how this objective is being achieved. Some examples include:

- Raising public awareness of and encouraging sign up to the Environment Agency's Floodline Warnings Direct service;
- Providing information on how citizens can minimise their own flood risk and protect themselves during flooding. Informed citizens are better able to prepare for flooding and therefore recover from a flood event; and
- The installation of remote monitoring equipment for key assets to enable efficient maintenance.

6.7 Objective 6 – Working in partnership with others to deliver the Local Strategy

6.7.1 Working in partnership both internally within Solihull Council and externally with the stakeholders and partners identified in Section 4 will be critical to managing flood risk effectively.

6.7.2 As part of discharging the new roles and responsibilities of the FWMA 2010, Solihull Council has created a Strategic and Operational Board which includes the Council's relevant officers and representatives from the Environment Agency and Severn Trent Water. The group's purpose is to ensure that local flood risk is being managed in line with the objectives set out by the Local Strategy , to share information and improve communication between partners.

6.7.3 The Action Plan (Appendix A) demonstrates how this objective is being achieved. Some examples include:

- The Multi-Agency Flood Plan was updated in 2014 to coordinate respond to flood events under the West Midlands Conurbation Local Resilience Forum. This has enhanced the ability of all authorities to respond to flood events in a co-ordinated and effective manner;
- Complying with regional and catchment based policies and strategies (see Section 3.3). This will ensure that actions taken by Solihull Council fit within the wider regional and national approach to flood risk management; and
- Learning best practice and sharing experiences with other risk management authorities both regionally and across England.

7 Funding Opportunities

7.1 Introduction

7.1.1 Flood and water management projects can be funded from a number of sources. In reality it is likely that a combination of funding sources will be used to ensure that the objectives identified in this Local Strategy are met.

7.1.2 The ability to generate partnership funding is important, as it opens up other funding sources, such as Flood and Coastal Erosion Risk Management Grant in Aid (FCERM GiA), which would be otherwise unavailable. Consultation with key partners must therefore be undertaken at the initial stages of any scheme to discuss and agree what funding is available.

7.1.3 It is important to note that the way in which projects are funded may alter in the future for a variety of reasons. These could include: funding availability; alterations in funding regimes; changes in political priorities; community pressure; new development; regeneration; a major flooding incident; revised assessments of flood risk; and changes in assessment methodology.

7.2 National Funding

Flood and Coastal Erosion Risk Management Grant in Aid Partnership Funding

7.2.1 Flood and Coastal Erosion Risk Management Grant in Aid (FCERM GiA) is the capital budget set aside by central government for flood defence projects across England.

7.2.2 Through a partnership funding approach, communities, via their Regional Flood and Coast Committees (RFCCs), can take decisions on which projects should proceed, based on local willingness to contribute towards the benefits that would be delivered. FDGiA funding can only be spent in the current year.

7.2.3 FCERM GiA can be applied for by the Environment Agency, Local Authorities, Internal Drainage Boards (IDBs), Highway Authorities and Water Companies, to deliver projects that they are managing. Local communities and flood action groups can work with any of these organisations to develop a scheme and put in an application for funding on their behalf. Funding can be made available for a variety of projects ranging from substantial defences to individual property protection.

7.2.4 In order for schemes to be eligible they have to be buildable, environmentally acceptable and cost beneficial. Schemes need to reduce the risk of flooding to homes from either surface water, ground water, fluvial or coastal sources. In the cases of schemes from Highway or Water Companies, only the costs associated with reducing flood risk for which they are not responsible are eligible for funding.

7.2.5 All viable and cost beneficial projects are able to secure some FCERM GiA funding, however not all projects will be able to secure 100% funding from this source. The amount of the project funding available from FCERM GiA is dependent on three factors:

- The value of benefits for householders as a result of the project, simply expressed as the number of homes which are moed from a high level of flood risk to a lower level of flood risk;
- The value of other benefits of the project such as: the benefits to business, agricultural productivity and protection for critical infrastructure;

- The environmental benefits of the project.

7.2.6 Whilst the government has recently introduced a new six year programme for the period 2015/21, the capital programme is reviewed on an annual basis and retains some flexibility which should enable new schemes to be integrated into the on-going programme of works. Although the programme focusses on the six year period to 2020/21, schemes with a longer lead in time can be included so that the need for future funding is identified.

7.2.7 Once a bid for FCERM GiA has been submitted to the Environment Agency it will be processed and prioritised nationally. The Environment Agency will then prioritise the funding in the following order:

- Projects which, for legal or health and safety reasons, need to be completed the following year;
- Projects, with approval levels of funding, which are already under construction;
- New projects which are prioritised based on the benefits they will deliver, taking into account the timing and availability of external contributions

Water Framework Directive Funding

7.2.8 Water Framework Directive (WFD) funding is provided through an Environmental Programme by the EA/Defra and is allocated to schemes which work towards the aims of the WFD.

7.2.9 There are some flood risk management activities which assist in meeting WFD targets, such as those identified by the Solihull River Corridor Improvement Plan. An example of this is weir removal, where the weir poses a blockage to fish migration. In such cases, it is possible to apply for 100% funding for weir removal and realise the associated flood risk management benefits. Weir removal should be preceded by an investigation into the potential impact on flood risk downstream of the weir (that there are no increases in flood risk downstream) and a geomorphological study into the potential impact on sediment transport and equilibrium. It is important that the main driver for the project must be to meet the requirements of the WFD with the flood risk benefits being secondary.

Catchment Restoration Fund

7.2.10 This is an Environment Agency administered fund open to third sector organisations. The fund aims to restore more natural features in and around waters and reduce the impact of small spread-out (diffuse) sources of pollution that arise from rural and urban land use.

7.3 Regional Funding

Local Levy

7.3.1 Local Levy is an additional, locally sources, form of income raised by the Regional Flood and Coastal Committee. It is raised by way of a levy (precept) on County and Metropolitan Councils, Unitary Authorities and London Boroughs, shared on the basis of B and D equivalents between all contributing bodies within the area of each RFCC. Money raised through Local Levy counts as a local contribution in terms of the FCERM GiA process, even though the levy is supported by funding through the Department of Communities and Local Government. Subject to committee approval, Local Levy is used for flood risk management projects that are not considered to be national priorities and which do not attract full funding through either FCERM GiA. In 2013/14 the Trent RFCC spent £0.99 million of local levy funds and £1.72 million in 2014/15.

7.3.2 Annually, each RFCC sets the level of Local Levy funding that LLFAs will contribute in the following year. Local Levy funds can be carried over from one year to the next. Solihull Council contributes approximately £83,000 annually to the Severn and Trent committees combined. Whilst not a direct match, the Council receives income from central government via the formula grant to cover this contribution.

7.4 Local and Other Funding Sources

7.4.1 Depending on the shortfall from FCERM GiA and the number of schemes competing for the RFCC's allocation, it is possible that the Local Levy will not solely provide all the required funding for a scheme and therefore other measures could be explored in the future if necessary. The following are examples of such measures:

Section 106 agreements

7.4.2 Under Section 106 of the Town and Country Planning Act 1990 Local Authorities can set Planning Obligations for developers. These are legally binding obligations that are attached to a piece of land and are registered as local land charges against that piece of land. These obligations enable a Local Authority to secure contributions to services, infrastructure and amenities in order to support and facilitate a proposed development.

7.4.3 'Making Space for Water' was produced by Defra in 2005 and identifies the Governments strategy to tackling flood risk over the lifetime of the strategy (20 years), One of the recommendations of 'Making Space for Water' was that local planning authorities should make more use of Section 106 agreements to ensure that there is a strong planning policy to manage flood risk. This means that any flood risk which is caused by, or increased by, new development should be resolved and funded by the developer.

7.4.4 Section 106 agreements can also be put in place to ensure new SuDS features will be maintained in the future. Funding for such maintenance will be provided in the form of a commuted sum, which will be paid to the adopting authority.

Community Infrastructure Levy (CIL)

7.4.5 CIL was introduced in 2010 to enable Local Authorities to raise funds to provide infrastructure and enable development. Money collected can be used for infrastructure transport, flood defences and green spaces. The CIL takes over from part of the Section 106 process. It is intended to collect funds to deliver strategic infrastructure that is not specifically related to the development site.

7.4.6 Solihull Council is in the process of implementing a CIL. It is intended that this will be available to fund projects that are part of the Council's flood risk management works and Green Infrastructure. The CIL Draft Charging Schedule has been submitted to the planning inspectorate for public examination and this is currently underway.

Business Rate Supplement/ Business Improvement Districts (BIDs)

7.4.7 Similar to Council Tax levies and precepts for residential properties, where businesses are at risk from flooding this could offer a route to collect contributions towards Local Flood Risk Management measures to reduce the risk. Funding from BIDs could potentially be accessed where specific benefits to businesses within the area can be demonstrated. This option is not being considered at this time in Solihull.

Council tax increases

7.4.8 Certain LLFAs are known to have increased Council tax across their localities with the express purpose of spending on local flood risk management. However, this is not being considered at this time in Solihull.

Public Works Loan Board

7.4.9 For larger scale projects, local authorities and Internal Drainage Boards (and a small number of other bodies such as Parish Councils) may be able to access loans through the Public Works Loans Board.

Private Contributions

7.4.10 Landowners and local residents in some circumstances may be willing to contribute funds to flood risk management where they can see a direct benefit to reducing their flood risk or improving their land drainage.

European Union Funding

7.4.11 The European Union may make grants or loans available through a number of EU programmes taking forward their climate change agenda, which encompasses climate mitigation, adaption and flooding.

7.5 Combination of Funding Sources

7.5.1 The preferred approach for funding flood risk management projects is to use a variety of funding streams, as few schemes in Solihull are likely to have sufficient benefits to be 100% funded through the FCERM GiA system. This is shown in the Figure 6[3] below as “Payment for Outcomes (anticipated)”.

[3] Taken from the Framework to assist the development of the Local Strategy for Flood Risk Management, 2nd Edition (Local Government Association, 2011)

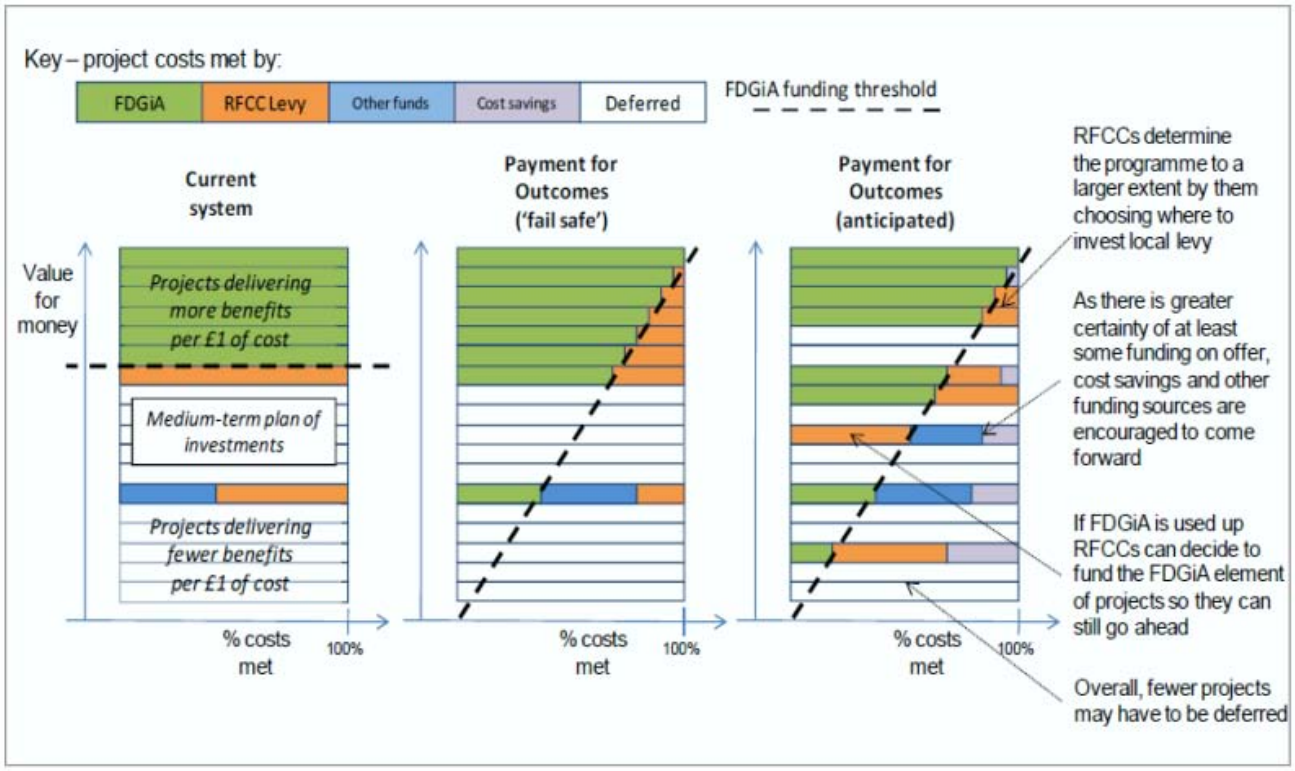


Figure 6 - Combination of possible funding sources to cover costs of flood risk management schemes

7.5.2 In partnership with the EA, Solihull Council will identify funding opportunities and suitable projects. We intend to work up schemes through the design stage to costing to understand how schemes can be funded.

8 Next Steps

8.1.1 The Local Strategy should be seen as a living document which is not fixed. The Local Strategy sets out Solihull Council's current vision for local flood risk management but can be adapted and adjusted as and when required. It is recommended that a review be undertaken on an annual basis.

8.1.2 A key aspect of this evolution will be the Strategy Action Plan which pulls together a number of items that have been identified through the development of this document. It is recognised that the Action Plan will need to adapt and change as actions are completed and new priorities become apparent. This may be due to a flood event which highlights a new risk, an opportunity for managing risk becomes available, or the legislative framework changes. It is therefore recommended that the action plan be formally reviewed each year to ensure that it remains up-to-date and reflects the priorities and work undertaken by Solihull Council in achieving its objectives.

9 Summary and Conclusions

9.1.1 Under the Flood and Water Management Act 2010 (FWMA 2010) Solihull Council became the Lead Local Flood Authority (LLFA). As the LLFA, Solihull Council is responsible for leading and co-ordinating local flood risk management, with responsibility for overseeing flood risk from ordinary watercourses, surface water, rainfall and groundwater. Other risk management authorities are responsible for other sources of flood risk, in particular the Environment Agency (responsible for flooding from Main Rivers, reservoirs, estuaries and the sea) and Severn Trent Water (the local water company responsible for flooding from their infrastructure). The Local Strategy provides an overview and assessment of local flood risk, and sets out objectives on how to manage and reduce risk.

9.1.2 Unfortunately Solihull has experienced flooding events in the past, with recent notable occurrences in 2007 and 2012. Such events have caused internal flooding of properties in parts of Cheswick Green, Dickens Heath, Meriden and Shirley. Whilst work has been done across the Borough to understand and reduce the impact of similar events happening in the future, property counts undertaken against the Risk of Flooding from Surface Water map suggest that 1,553 properties are within the 1 in 30 year surface water flood outline, an event that is more likely to occur than the estimated 1 in 75 year event that occurred in 2007.

9.1.3 It is therefore extremely important that an approach for how local flood risk can be monitored and reduced is developed. This Local Flood Risk Management Strategy does exactly this and has identified 6 main objective as follows:

- Objective 1 – Improving understanding and communication of flood risk in Solihull;
- Objective 2 – Managing the likelihood and impacts of flooding
- Objective 3 – Helping Solihull's citizens to manage their own risk
- Objective 4 – Guiding appropriate development in Solihull
- Objective 5 – Improving flood prediction, warning and post flood recovery
- Objective 6 – Working in partnership with others to deliver the Local Strategy

9.1.4 Although the objectives listed above provide a framework for managing local flood risk, the most important part of the Local Strategy is the Action Plan, which demonstrates what has been completed or is on-going by the LLFA and other partners, and also explains what future works are hoped to be carried out in order to achieve each of the above objectives. The Action Plan allows for transparency and accountability between partners and the general public and is presented in Appendix A of this document.

9.1.5 At all times it should be remembered that flooding is a natural process and stopping it altogether is impossible. However, through the aims, objectives and actions set out in this strategy it is intended that the risk and impact on the built and natural environment within Solihull be mitigated as much as possible in coming years.

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Appendices

Appendix A – Action Plan

Action Plan

The most important part of the Local Strategy is the Action Plan, which demonstrates what has been completed by Solihull MBC and others, and explains what future works are planned to be carried out. This allows for transparency and accountability between partners and for the general public. The Action Plan is presented below in Table 2 with a colour key provided in Table 1.

Table 1 - Action Plan Key

Priority	Low	Low	Medium	Medium	High	High
Status	On-going	Completed	On-going	Completed	On-going	Completed

Table 2 - Action Plan

Understanding/ Communicating	Managing	Community	Development	Prediction/Warning /Recovery	Partnership	Action	Priority	Start Date	Completion Date	Lead Partner
x	x			x	x	Prepare Preliminary Flood Risk Assessment (PFRA)	High	2011	2011	SMBC
x	x		x	x	x	Prepare flood maps for surface water and locally agreed surface water information	High	2011	2011	SMBC/EA
x	x	x	x	x	x	Produce the Local Flood Risk Management Strategy	High	2013	2013	SMBC
x	x		x	x	x	Review the Updated Flood Map for Surface Water	High	2013	2013	SMBC/EA
x	x	x	x	x	x	Develop a Flood Risk Management Plan for the West Midlands Cluster	High	2012	2015	EA
x	x			x		Preparation of a pre flood action plan identifying inspections and works required at critical locations before a flood	High	2011	On-going	SMBC
x	x					Develop an affordable and suitable flood asset maintenance regime based on local knowledge and risk	High	On-going	On-going	SMBC

Understanding/ Communicating	Managing	Community	Development	Prediction/Warning /Recovery	Partnership	Action	Priority	Start Date	Completion Date	Lead Partner
			x			Use available information on flood risk to identify appropriate development potential and steer growth towards suitable areas	High	On-going	On-going	SMBC
			x		x	Develop a planning process to create clear advice and direction to developers on flood risk and drainage	High	On-going	On-going	SMBC
	x			x	x	Develop a programme of flood mitigation schemes and initiatives which are likely to be funded through the National Programme or Local Levy	High	On-going	On-going	SMBC
	x		x			Encouraging the use of SuDS in developments	High	On-going	On-going	SMBC
	x		x		x	Ensure that developers make necessary contributions to the cost of SuDS and flood risk management activities	High	On-going	On-going	SMBC
	x			x		Use the surface water flood maps to ensure that the highway drainage cleansing regime is targeted towards areas at highest risk	High	On-going	On-going	SMBC
	x			x		Use the surface water flood map outputs to ensure that the trash screen inspection/cleansing regime is targeted towards areas at highest risk	High	On-going	On-going	SMBC
	x	x	x	x		Define 'Local Significant Harmful Consequence' Criteria	Medium	2011	2011	SMBC
	x				x	Implement the River Basin Management Plans to comply with the Water Framework Directive (WFD)	Medium	Initiated	2015	EA
	x				x	Improve water quality and achieve other WFD objectives	Medium	Initiated	2015	SMBC/EA
	x		x		x	Maintain asset management plans for EA structures	Medium	2011	2015	EA
		x			x	Undertake partnership working wherever possible to maximise opportunities for flood risk alleviation	Medium	2009	On-going	SMBC
x	x		x		x	Comply with regional and catchment based policies and strategies	Medium	On-going	On-going	SMBC
			x		x	Comply with the Solihull Local Plan principles and objectives for mitigating flood risk and improving the water environment	Medium	On-going	On-going	SMBC
x	x			x	x	Prepare an asset register, to include asset data sets from external stakeholders and partners.	Medium	On-going	On-going	SMBC
x	x			x	x	Record flood incidents and collate historical flooding information	Medium	On-going	On-going	SMBC
x		x				Engage with key members of the community to gain information on flood risk issues	Medium	On-going	On-going	SMBC

Understanding/ Communicating	Managing	Community	Development	Prediction/Warning /Recovery	Partnership	Action	Priority	Start Date	Completion Date	Lead Partner
x					x	Learn best practice and sharing experiences	Medium	On-going	On-going	EA
x	x				x	Manage and reduce flooding caused by blocked or lack of capacity in storm water sewers	Medium	On-going	On-going	STW
	x		x			Undertake consenting activities for ordinary watercourses	Medium	On-going	On-going	SMBC
	x				x	Mitigating environmental impacts of flood risk management activities	Medium	On-going	On-going	SMBC/EA
	x	x				Provide information to those living near watercourses on on-going maintenance and enforcement as appropriate	Medium	On-going	On-going	SMBC
	x	x		x		Provide information about how citizens can minimise flood risk and protect themselves during flooding	Medium	On-going	On-going	SMBC
		x		x	x	Raising public awareness of and encouraging sign up to the Floodline Warnings Direct service.	Medium	On-going	On-going	EA
	x	x			x	Advise and implement property level flood prevention measures where appropriate	Medium	On-going	On-going	SMBC/EA
	x	x			x	Give local communities a greater involvement and responsibility for project design and delivery at an early stage of flood risk management schemes	Medium	On-going	On-going	SMBC/EA
x	x					Inspect and assess the condition of ordinary watercourses (including culverted sections)	Low	On-going	On-going	SMBC
		x				Support and work with community volunteer groups wherever possible	Low	On-going	On-going	SMBC
x	x					Identify any assets to be designated in line with the FWMA 10	Low	On-going	On-going	SMBC

Appendix B – Historical Flood Information

Taken from the Preliminary Flood Risk Assessment.

Fluvial

Historic records of fluvial flooding are concentrated on the River Blythe and the River Cole. During the 2007 extreme rainfall event, with frequency of 1 in 75 years, there was extensive flooding of both the Rive Blythe and River Cole. Though the River Blythe is a main watercourse and is therefore not within the scope of this PFRA, the flooding of the River Blythe was also connected to localised flooding from ordinary water courses (in addition to the River Cole) which was present in areas throughout the Borough. This resulted in the internal flooding in excess of 20 properties, concentrated around Nethercote Gardens and Cheswick Green.

There are also historic records of Low Brook flooding, the extents of which include A45 and the boundary fence of Birmingham Airport. This is again a Main River and therefore not included within the scope of this report, however, this brook is linked to associated ordinary watercourses.

There are no other fluvial flooding records with known significant harmful consequences.

Surface Water

There are multiple records of surface water flooding within the Solihull area. These are spread throughout the Borough, but are concentrated towards the west. These are attributed to overland flows, inundation of the sewerage system and overtopping of drainage ditches. There are no records of surface water flooding with significant harmful consequences.

Surface water flooding is thought to have a notable contribution to the significant fluvial events outlined above.

There are multiple critical drainage areas within Solihull, these are again concentrated within the west. The Local Flood Risk Management Plan for the River Cole suggests that Combined Sewer Outfall's (CSO's) contribute heavily to the flows within the watercourses in Solihull.

Groundwater flooding

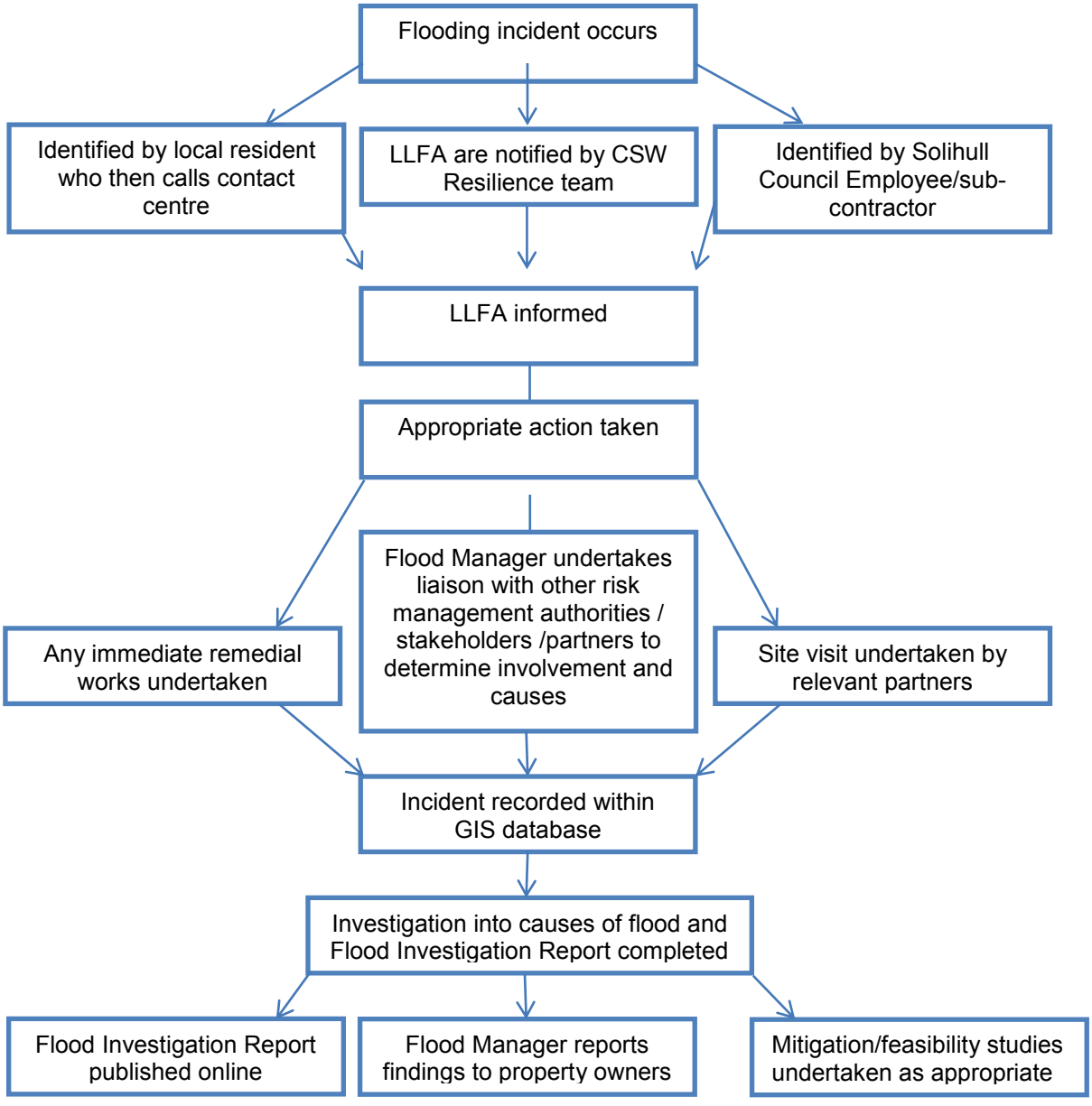
There are no confirmed records of groundwater flooding within the Borough. However, there has been a recent increase of unsubstantiated reports of groundwater emergence beneath the floors of properties, particularly within the Shirley area. These suggest that there has been a recent increase in the occurrence of groundwater flooding within Solihull.

Flooding from artificial sources

There are a number of canals and impounded water bodies within the Solihull area. There is only one record of flooding from an artificial course, namely a breach of the Grand Union Canal near Copt Heath. This was attributed to a farmer excavating the toe or the embankment causing a slope failure. There are no known consequences of this breach and so are assumed to not be significantly harmful.

Appendix C – Flood Incident Recording and Investigation Protocols

Under Section 19 of the FWMA 2010, an LLFA must investigate all flood events that meet the Local Significance Criteria. All flood incidents must be recorded.



Appendix D – Asset Register and Structure Designation

A designated structure or feature is one which is perceived to potentially affect flooding and is considered to be significant when assessing flood risk.

Designation of a structure or feature places a land charge on the asset and prevents any works to the asset without the prior approval of the Flood Risk Manager. At the time of preparation of the report no assets have been designated as flood defence structures in Solihull on the advice of the Environment Agency whilst pilot studies are undertaken. Any future designation will be recorded here.

The asset register is a record of assets that are structures or features which have a significant effect on flood risk within Solihull as determined by the Council. These are primarily owned and maintained by Solihull Council but also by third parties (note that the Environment Agency and Severn Trent's assets are not included to avoid duplication of databases).

Attributes to be recorded may include:

- Asset type;
- Location;
- Details of any affected watercourses;
- NGR (both upstream and downstream if relevant);
- Details of ownership;
- Details of maintenance (responsibility and activities);
- Description of materials;
- Measurements (e.g. height, depth etc. as necessary);
- Date/time of entry;
- Name of designator;
- Photograph(s);
- Any other relevant information.

Appendix E – Ordinary Watercourse Consenting Procedure

In the first instance discussions should be held with the Flood Risk Manager within Solihull Council. If consent is deemed to be necessary then the following forms will need to be submitted.

Solihull Metropolitan Borough Council
Application for Ordinary Watercourse
Land Drainage Consent (Land Drainage Act 1991)

Introduction	**Contents:**
Before completing this form, we recommend you contact us for advice on your proposal. Please ensure you read through the guidance notes and the application form carefully before you fill in the form. It should take you approximately 20 minutes to fill in this application form. **If you are not sure about anything in this form, please contact us using the details at the end of this form.**	**1. Applicant details** **2. Agent details** **3. Contact details** **4. Interest in the land** **5. Location of work** **6. Description and purpose of proposed work** **7. Plans and sections** **8. Construction details** **9. Environment Agency interests** **10. Planning approvals** **11. Maintenance of structure** **12. Effects on the environment** **13. Additional Information** **14. Fees** **15. Checklist** **16. Declaration**

1 The Applicant

Are you applying as a company, an individual, a group of individuals (partnership) or a public body?

- ☐ **Company** – Go to Section 1.1
- ☐ **Individual** – Go to section 1.2
- ☐ **Group of Individuals –** Go to section 1.3
- ☐ **Public Body –** Go to section 1.4

1.1 Application from Companies

To apply as a company, you must be a registered company formally registered with Companies House. Please see Companies House website for more information.

Company name, as registered with Companies House:

_____

_____

.

Company registration number:

_____

Now go straight to section 2

1.2 Application from individuals

Give your full name:

Title (Mr,Mrs,Miss etc.):_____

First name: _____

Last name: _____

Now go straight to section 2.

1.3 Application from groups of individuals

What type of group are you?

- ☐ **Charity**
- ☐ **Group of individuals**
- ☐ **Club**
- ☐ **Partnership**
- ☐ **Other**

Name of your group: _____

_____

Give details of your group's main representatives:

Titles (Mr Mrs Miss etc): Postal address

First name: _____

Last name: _____

Position: _____

Address: _____

_____

_____

Postcode: _____

Contact details

Phone: _____

Fax: _____

Mobile: _____

Email: _____

Now go straight to section 2.

1.4 Application from public bodies

Name of the public body

_____

What type of public body are you?

_____

2. Your address

If you are applying as an individual, group of individuals or public body, do not fill in 2.1 below. Go straight to 2.2

2.1 Office Address registered with Companies House
Address:_____

_____

_____

Postcode:_____

2.2 Your main UK address
Address:_____

_____

_____

Postcode:_____

3. Contact details
Who we can contact about your application?

This can be you or someone acting as a consultant or an agent for you during your application process.

Title (Mr,Mrs,Miss etc): _____

First name: _____

Last name: _____

Position: _____

Address:_____

_____

_____

_____

Postcode:_____

Contact details:

Phone: _____

Mobile: _____

Email:_____

4. Your Interest in the Land

What is your interest in the Land?

_____

_____

_____

_____

_____

5. Location of the Proposed Works

5.1 What is the Location of the Proposed Works?

_____

_____

_____

5.2 Name of River or Watercourse (if known)

_____

_____

5.3 National Grid Reference of the Site (12 figures)

_____

6. Description and purpose of the proposed works

6.1 Please provide a description of the proposed works

_____

_____

_____

_____

_____

_____

_____

_____

_____

6.2 Number of structures

_____

_____

7 Plans and sections:

7.1 Please provide a description and reference number of all plans and sections you have provided (see the guidance notes) Please attach separate Sheets if required)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

8 Construction details / Design Details

8.1 Are the works permanent or temporary or both?

Permanent (e.g access culvert) ☐
Temporary (e.g scaffolding) ☐

If so how long _____

8.2 Date construction work will start?

Date (DD/MM/YYYY)_____

8.3 Design Details

Estimated discharge rate at outfalls _____

Estimated run off rate_____

9. Environmental Agency Interests

9.1 Do the proposed works involve or affect the following?

If yes, please contact the Environment Agency on 03708 506 506

- ☐ **Impounding (holding back a watercourse)**
- ☐ **Abstracting (removing) Water**
- ☐ **Fish or fisheries**
- ☐ **Disposing of Waste Material**
- ☐ **Water Quality**

10 Other authority permissions

Fill in this section if you have been given planning permission for the proposed works. Otherwise go to Section 12.

10.1 Planning authority

_____

10.2 Application number

_____

10.3 Approval date

Date (DD/MM/YYYY)_____

10.4 Are the works associated with an application the Sustainable drainage board (SAB)? (to be implemented 2013)

Yes ☐ **No** ☐

11 Maintaining the structure

11.1 Name of person or organisation responsible for maintaining the structure

During Construction _____

Upon Completion _____

12 Effects on the environment

12.1 Please provide brief details of the effect the work will have on the environment together with any proposals for improvements you will make or action you will take to compensate for the effects.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

13. Additional Information
Please add any additional information that you feel supports your application.

_____

_____

_____

_____

_____

_____

14. Fees

There is a charge of £50 for each structure or operation for applications made under the Land Drainage Act.

15 Checklist
Please read through this list and tick the items you are sending with this application.

Completed Form	☐
Fee (If applicable)	☐
Copies of drawings/plans	☐
Additional supporting information	☐
Method Statement	☐

The Data Protection Act 1998

We will process the information you provide so that we can deal with your enquiry.

We may also process or release the information to:

- offer you documents or services relating to environmental matters;
- consult the public, public organisations and other organisations (for example, the Health and Safety Executive, local authorities, the emergency services, the Department for Environment, Food and Rural Affairs) on environmental issues;
- carry out research into environmental issues and develop solutions to problems;
- provide information from the public register to anyone who asks;
- prevent anyone from breaking environmental law, investigate cases where environmental law may have been broken, and take any action that is needed;
- assess whether customers are satisfied with our service and improve it where necessary; and
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (if the Data Protection Act allows).

We may pass the information on to our agents or representatives to do these things for us

16 Declaration

By signing below you are declaring that, as far as you know, the information given in this application, including any supporting documents, is true.

Signature:

Title (Mr, Mrs, Miss etc.): _____

First name: _____

Last name: _____

Position: _____

Today's Date (DD/MM/YYYY) _____

Next steps

Please return this form, together with any supporting documents, to us either

by email: connectcc@solihull.gov.uk (ask to be forwarded to the Flood Risk Manager in the Highway Services department)

or post to:

Ordinary Watercourse Consent

Flood Risk Manager

Solihull Metropolitan Borough Council

The Council House

Manor Square

Solihull

B91 3QB

If you need help filling in this form, contact the person who sent it to you or contact us using the details below.

General enquiries:

0121 704 8001 (ask to be forwarded to the Flood Risk Manager in the Highway Services department)

Email: connectcc@solihull.gov.uk (ask to be forwarded to the Flood Risk Manager in the Highway Services department)

For LLFA Use Only

Date Received: _____ **Application Reference:**_____

Fee Applicable: _____

Solihull Metropolitan Borough Council
Application for Ordinary Watercourse Land Drainage Consent - Guidance Notes

Introduction

Please read through these guidance notes and the application form carefully before you fill the form in.

If you are not sure about anything in these guidance notes, contact us using the details at the bottom of this form.

These guidance notes give you information to help you fill in your application for Ordinary Watercourse Land Drainage Consent.

Before completing this form, you are recommended to contact us for advice on your proposal. Under the Land Drainage Act 1991, you need consent if you want to build a culvert or structure (such as a weir) to control the flow of water in any ordinary watercourse.

There is a charge of £50 for each structure or operation for applications made under the Land Drainage Act 1991.

Please follow this guidance to help avoid delays in your application.

Contents:

1 About you, the applicant

Please tick one box to indicate the type of applicant you are.
Then

- If you are applying as a company, go straight to Section 1.1;
- If you are applying as an individual, go straight to Section 1.2;
- If you are applying as a group of individuals, go straight to Section 1.3; **or**
- If you are applying as a public body, go straight to Section 1.4.

1.1 Applications from companies

Fill in this section if you would like to apply for Land Drainage Consent as a registered Company.

To apply as a company, you must be a registered company formally registered with Company House. Any Land Drainage Consent you get will be registered in the company name registered with Companies House.

You must give us your company name, as registered with Companies House, your company registration number, and the full name of the company director, and their official position

Once you have filled in this section, go to section 2.

1.2 Applications from individuals:

Fill in this section if you would like to apply for Land Drainage Consent as an individual.

Give us your full name. The name you give will be the name on any Land Drainage Consent we grant.

Once you have filled in this section, go to section 2.

1.3 Applications from groups of individuals:

Fill in this section if you would like to apply for Land Drainage Consent as a charity, club, partnership, or group of individuals.

Tick the relevant box to state whether you are a charity, club, partnership, or group of individuals.

Give us the name of your group. The name you give will be the name on any Land Drainage Consent we grant.

If you are a limited liability partnership, please give the full name

You must give us your full name, position, full address and contact details of your group's main representative

Once you have filled in this section, go to section 2.

1.4 Applications from public bodies:

Fill in this section if you would like to apply for Land Drainage Consent as a public body such as a local authority or an NHS trust.

Please give us the full name of the public body.

The name you give will be the name on any Land Drainage Consent we grant.

Please specify what type of public body you are.

Once you have filled in this section, go to section 2

2 Your address

All application must fill in this section

You must give us your full UK address. The address you give here will be the address your Land Drainage Consent will be registered to and will be shown on any Land Drainage Consent we grant.

- If you are applying as a company, fill in 2.1. Give your office address registered with Companies House. If this address is outside the UK, give the address of your main UK office in 2.2. We will not be able to process your application if you do not give us a UK address.

- If you are applying as an individual, a group of individuals or a public body go straight to 2.2 and give the address of your main office in the UK. We will not be able to process your application if you do not give us a UK address.

3 Contact details

All application must fill in this section

You need to tell us who we should contact about your application for Land Drainage consent. You can nominate someone other than the person named on any Land Drainage consent (for example consultant or agent). You need to give us your or the relevant person's full name, address and contact details.

4 Your interest in the Land

We need to know what interest you have in the land where the works will be carried out (for example, whether you are the landowner or tenant). If any work will carried out on land that you do not own, you will need permission from whoever owns the land.

5. Location of the Proposed Works.

We need to be able to easily identify where the proposed works will be carried out. Please give details of:

- The location of the site;
- The name of the watercourse; and
- The national grid Reference (12 figures)

6 Description and purpose of the proposed works.

It is important that you accurately describe the proposals in your application. Please tell us the purpose of the works and the number of structures you need consent for.

7 Plans and sections

To consider your proposals we need to receive plans and drawings, that should ideally be undertaken by a competent engineer or surveyor and showing Ordnance Datum Newlyn (the height above sea level)

You need to provide us with a copy of all relevant drawings. These can be submitted in hard copy or electronically (in pdf format). The drawings must be no larger than A0 size, and they need to include the following.

Location Plan:

This should be at an appropriate scale and be based on an Ordnance Survey map. It must clearly show the general location of the site and include general features and street names. It must also identify the watercourse or other bodies of water in the surrounding area.

Site plan (general arrangement):

You must provide a plan of the site showing:

- The existing site, including any watercourse;
- Your proposals
- The position of any structures which may influence local river hydraulics, including bridges, pipes and ducts, ways of crossing the watercourse, culverts and screens, embankments, walls, outfalls and so on; and
- Existing fish passes or structures intended to allow fish to pass upstream and downstream;

The plan should be drawn to an appropriate scale, which must be clearly stated.

Cross sections

Where works encroach into any watercourse, the you should provide cross sections both upstream and downstream of the proposed works. Cross sections

should be drawn as if looking downstream on the watercourse and should include details of existing and proposed features and water levels.

Longitudinal sections:

We need longitudinal sections taken along the centre line of the watercourse. These must show the existing and proposed features including water levels, bed levels and structures. They should extend both upstream and downstream of the proposed work.

Detailed drawings:

These are to show details of the existing and proposed features such as the following:

- The materials to be used for any structures.
- The location of any proposed service pipes or cables, which may affect the future maintenance of the watercourse.
- Details of any tree, shrub, hedgerow, pond, or wetland area that may be affected by the proposed works.
- Details of any planting or seeding.
- Dams and weirs. (We need a plan showing the extent of the water impounded (held back) under normal and flood conditions so that we can assess the possible effect on land next to the river. The plan should also show any land drains to be affected.)

8 Construction details / Design details

You may need separate consents for the permanent works and any temporary works that do not form part of the permanent works. Temporary works could include, for example, scaffolding, cofferdams (watertight enclosures) across a watercourse, or temporary diversions of water while work is carried out.

For any temporary work, we need to know how you are proposing to carry out the work. So you need to send us a "method statement" that includes details you plan to take to minimum disruption and reduce any unwanted effects while the work is being carried out.

We need to know when you are proposing to carry out the work and how long you think it will take. When you are planning the work you need to make sure that you have allowed enough time for us to consider your application.

You may need to provide relevant design calculations for:

- Hydrolic flows
- Discharge and or run off rates.

9 Environment Agency interests

Please tick the appropriate boxes.

If you answer, "yes", to any of the questions, you will probably need extra licenses or consents from the Environment Agency before you start work.

You should make sure that you have enough time to get all approvals you need before you start work. If you don't, this could delay the work.

10 Planning approvals

Please provide details of any planning permissions you may have or are applying for that relates to this proposal.

11 Maintaining the structure

We need to know who will be responsible for maintenance both during construction work and after the work has finished.

12 Effects on the environment

We have a legal duty to protect and improve the environment, so we must consider the environmental effects of your proposal

You may need to carry out an environmental appraisal to assess the effects of your work. You should contact us before you send us your application so that we can advise you on this. If you don't, your application could be delayed.

The environmental appraisal should identify and consider all likely effects on the environment. You should consider the direct and indirect effects the work has on sites and features of interest and species of particular value.

Include any specific measures you plan to minimise any disruption and reduce any unwanted effects while the work is ongoing.

Set out any opportunities for you to improve the environmental value of the site. This may include creating water features, planting trees and shrubs that would normally grow at the site, providing bird nesting boxes or creating sustainable places for wildlife to live.

If as part of a planning permission we have asked for an environmental appraisal, you must send it to us with all the other supporting documents we need.

If your site falls within, is next to or is linked to a nature conservation site, contact us as soon as possible to discuss your proposals before you send us your application.

Under the European Habitats Regulations, we must make sure that Flood Defence Consent does not have a direct or indirect negative effect on any site specified in the regulations, including:

- sites of special scientific interest (SSSIs)
- designated special areas of conservation (SACs);
- special protection areas (SPAs);
- Listed RAMSAR sites; and
- scheduled ancient monuments (SAMs)

Under the Habitats Regulations, we must consult Natural England or the Countryside Council for Wales (or CADW in the case of ancient monuments).

You may want to contact these organisations yourself to get their views on your proposal.

13 Additional Information

Any additional information that relates to the application

14 Fees

Tick the relevant documents in this section so that we know what you are sending.

The fees for Land Drainage Consent is £50, but please contact us before you send us this application if you are requesting consent for a number of structures.

15 Checklist

It is important that as part of the application process your proposals are assessed for compliance with the Water Framework Directive (WFD) objectives.

A proposal included in a consent application might cause a water body to deteriorate in status and/or prevent its ecological objectives from being met.

To achieve the goals of the WFD, we must ensure any new scheme or activity is assessed for WFD compliance. It's essential that you contact your area teams to discuss any requirement to undertake a WFD assessment prior to submitting your application.

.

The Data Protection Act 1998

This section sets out our rights and responsibilities under the Data Protection Act 1998.

16 Declarations

By signing this section, you are declaring that, as far as you know, the information you have provided, including the map and any supporting documents, is true.

We will not accept an unsigned application.

- If you are applying as a company, which has trustees, all trustees must sign the declaration.

- If you are applying as a limited company, a company secretary or a director must sign the declaration.

Next steps

Please return your completed Application for Ordinary Watercourse Consent' and any supporting documents to us either by hard copy or email.

By email: connectcc@solihull.gov.uk (ask to be forwarded to the Flood Risk Manager in the Highway Services department)

Address: Ordinary Watercourse Consent
Flood Risk Manager
Solihull Metropolitan Borough Council
The Council House
Manor Square
Solihull
B91 3QB

If you need help filling in this form, contact the person who sent it to you or contact us as shown below.

General enquiries:

0121 704 8001 (ask to be forwarded to the Flood Risk Manager in the Highway Services department)

Email:

connectcc@solihull.gov.uk (ask to be forwarded to the Flood Risk Manager in the Highway Services department)

Appendix F – Pre-Flood Action Plan (including Sandbag Policy)

Asset	Day-to-day flood prevention activities	Actions when a flood event is predicted
Highway drainage assets	Routine maintenance (cleansing of gullies etc.)	Attend known hotspots where possible.
Trash Screens	Routine clearance of screens/grilles	Attend key trash screens
Flood Defence Assets	Inspection and maintenance of key flood defence assets	Inspection and remedial maintenance
Watercourses	General maintenance. Riparian owner education.	No action
Resources/Staff	Ensure equipment is ready and available and staff are on standby. Monitor weather forecast.	Attend incidents as required. Organise road closures and deployment of flood warning signs and sandbags as necessary.

Sandbag Policy

Solihull Council do not have a duty to provide sandbags, however where available, Solihull Council will provide sandbags to protect buildings from imminent internal flooding.

Sandbags will not be provided to protect external areas or non-habitable internal areas such as garages or porches.

We cannot guarantee that we will be able to deliver sandbags to all who have requested them during a flood event.

If a property owner/occupier is aware that their property is at risk of flooding or it has flooded in the past, we strongly advise they purchase their own sandbags or install property level flood protection measures.

Sandbins have been placed in high-risk locations across the Borough, including Cheswick Green and Nethercote Gardens, where residents can collect sand and fill bags. Where these facilities exist, arrangements for access to the sand/bags lie with designated key holders or flood wardens, and Solihull Council will only attend significant incidents. The relevant local Parish Council should be contacted for further details.

We will not dispose of sandbags when the risk of flooding subsided. This is the property owner's responsibility.

To request sandbags call 0121 704 8004.

Appendix G – Riparian Owners Responsibilities

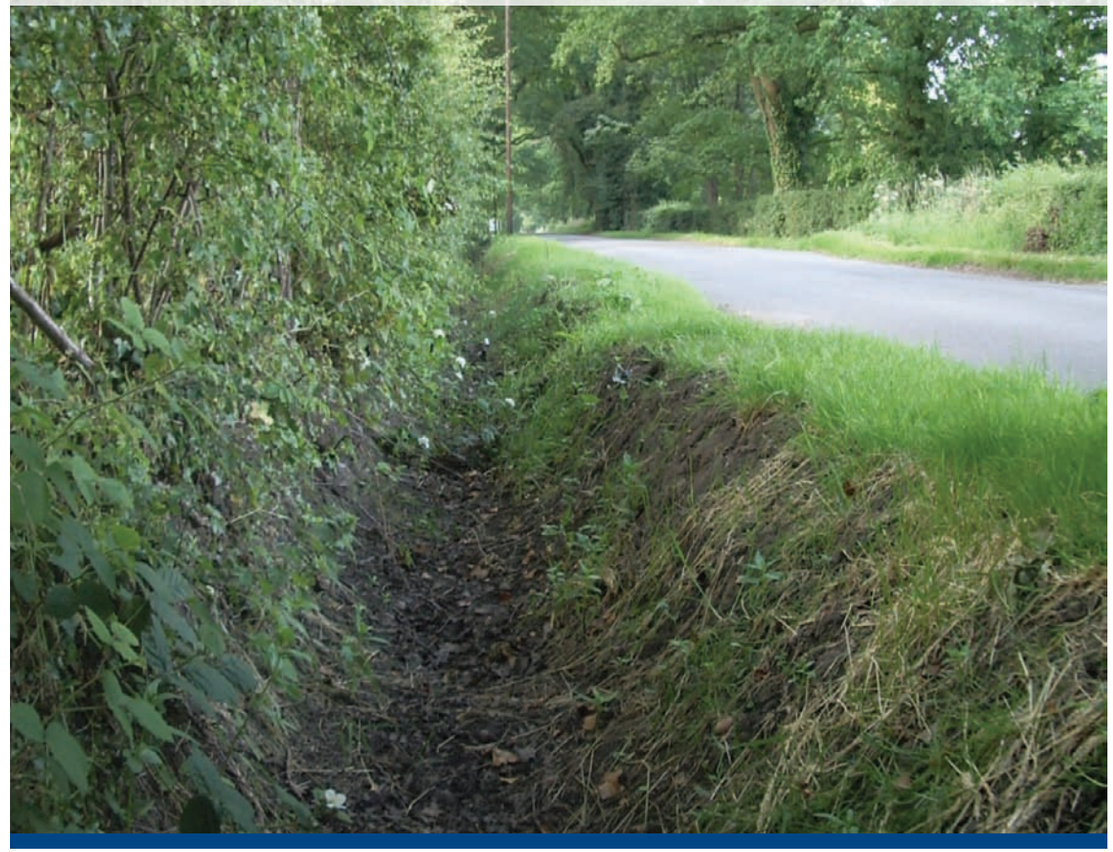
Land drainage – responsibilities of the Council

The Council is responsible for making proper arrangements for storm water run-off from the highway, eg regular maintenance of gullies and connecting pipework. Working with the Environment Agency, we jointly have powers to act on land drainage matters, including improving or constructing new works on watercourses. The Council is also able to serve notice on landowners requiring them to carry out necessary work to maintain the flow within a watercourse.

For more information, contact:
0121 704 6418 or **0121 704 6133**
email:
highwaydrainage@solihull.gov.uk
or write to:
Highway Drainage, Moat Lane Depot, Lode Lane, Solihull B91 2LW

Ditches and Land Drainage Responsibilities

Advisory Leaflet for Landowners



www.solihull.gov.uk

Solihull Metropolitan Borough Council

This leaflet is for people who have ditches or watercourses on their land, or have land which drains to lower land.

It outlines the legal responsibilities of the landowner and the Council, and who to contact for more information.

Why maintain ditches?

If ditches are not maintained, the surrounding land becomes prone to flooding and ice formation in winter. This can cause problems for surrounding homes, and roads. Flooding causes roads to become damaged and if water runs onto the road and freezes, can cause accidents. In rural areas, the drainage of the roads can be dictated by the condition of the adjacent ditches.

This is why it is so important to keep ditches and watercourses well maintained and clear of debris.

Who's responsible?

Generally, ditches at the edge of adopted highways are owned by the adjacent landowner. The Land Drainage Act of 1991 requires landowners to keep the watercourse clear by carrying out maintenance work. This can be ditches within their land or on the boundaries.

This also is the case for ditches and watercourses that are piped, including the maintenance of the pipework itself.

Responsibilities of land and property owners

Landowners who have ditches and watercourses on their land have a duty of care to other landowners and the local community.

As a landowner, you have the responsibility to accept and pass on to lower land any surface water flows over your property, including highway water. You must do this without polluting the flow or diverting it.

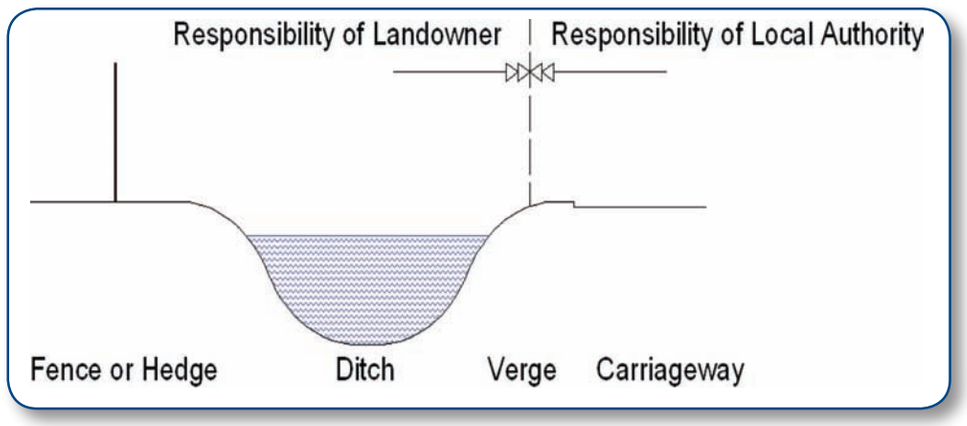
You are also responsible for any damage caused due to any alterations on your land that changes the way the water would flow onto adjacent lower land. Eg, changes in ploughing or building of impermeable surfaces which may increase the volume of water onto adjacent land.

You must maintain the bed and banks of ditches or watercourses on or at the boundaries of your land. This includes trees and shrubs growing on the banks. You are responsible for clearing any debris – natural or otherwise.

And you must ensure there are no obstructions on the bed and banks of the ditches that could cause problems on your land or elsewhere. Please don't use a ditch to dispose of garden or any other waste.

There is no common law duty, however, to improve a ditch or watercourse.

Diagram showing the common arrangement of responsibilities regarding roadside ditches



WSP UK Limited
Kings Orchard,
1 Queen St,
Bristol,
BS2 0HQ
Tel: +44 11 7930 2000
Fax: +44 11 7929 4624
www.wspgroup.co.uk