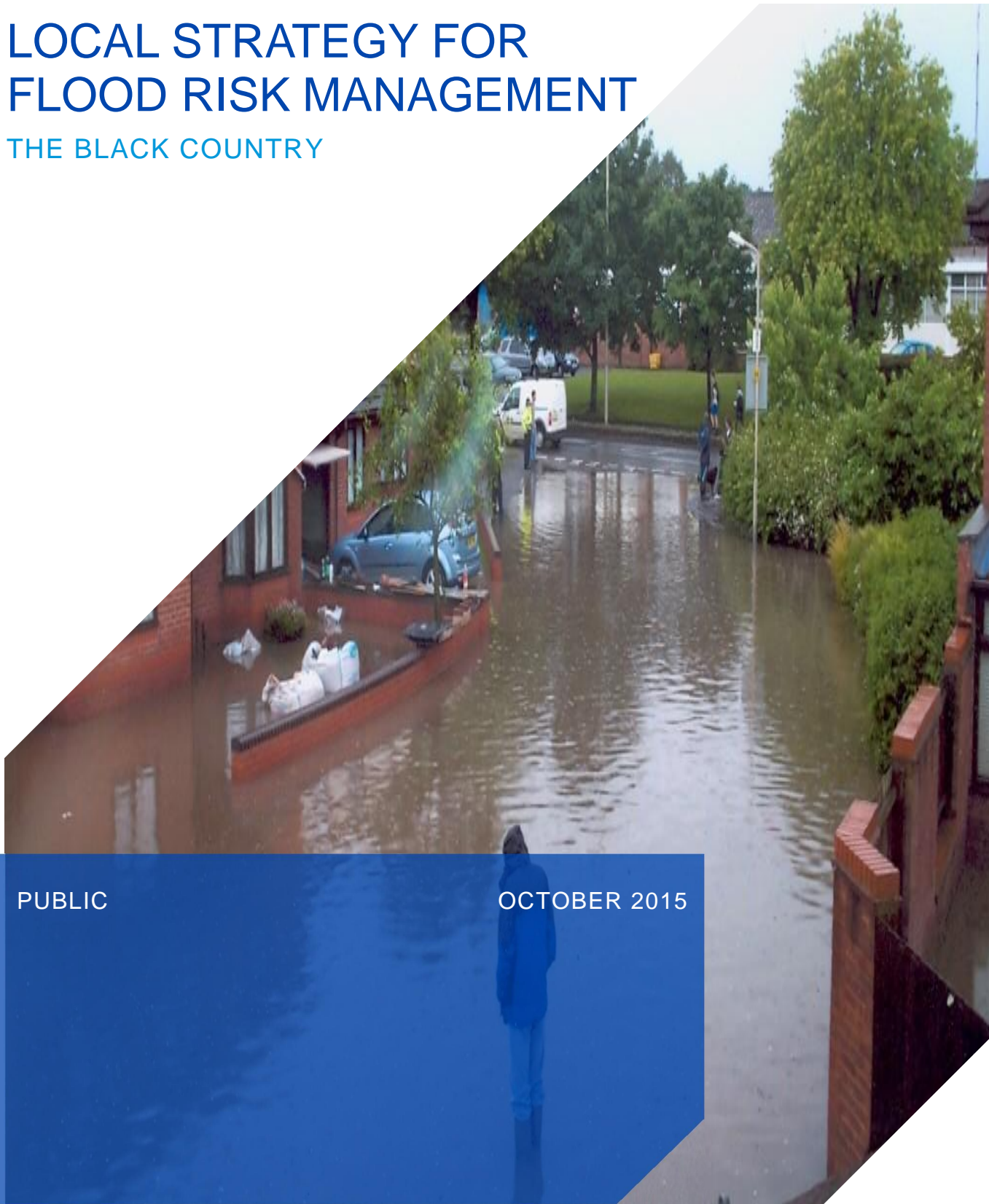


# LOCAL STRATEGY FOR FLOOD RISK MANAGEMENT

THE BLACK COUNTRY



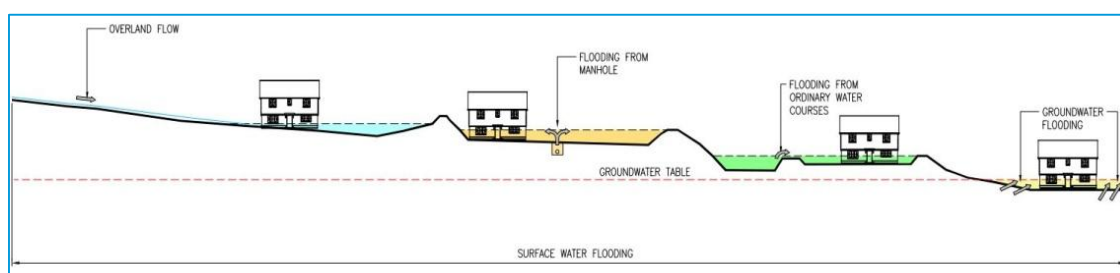
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# TERMINOLOGY

## KEY DEFINITIONS

TERM	MEANING
Surface water flooding	In this context, surface water flooding describes flooding from sewers, drains and runoff from land, small water courses and ditches that occurs as a result of heavy rainfall.
Groundwater flooding	Caused by raised groundwater levels, typically following prolonged rain. High groundwater levels may result in increased overland flow flooding.
Overland Flow / Surface Water Run-off / Pluvial Flooding	Water flowing over the ground surface that has not reached a natural or artificial drainage channel.
Fluvial flooding	Fluvial flooding occurs when rivers overflow and burst their banks, due to high or intense rainfall which flows into them.
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 has powers to undertake works on any stretch of main river and is responsible for flood risk management activities.
Ordinary watercourse	Ordinary watercourse is a statutory designation which includes 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.



# GLOSSARY

TERM	MEANING
<b>Area Action Plans (AAP)</b>	A type of Development Plan Document focussed on a specific location or area subject to conservation or significant change (e.g. major regeneration).
<b>The Black Country</b>	A term loosely describing the area between Birmingham and Wolverhampton. In planning and local authority terms it includes Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council, Walsall Council and Wolverhampton City Council.
<b>Catchment Flood Management Plan (CFMP)</b>	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.
<b>Chance of flooding</b>	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% annual probability of flooding in any given year. The guidance uses the chance of flooding with the annual probability of a flood incident occurring in brackets. The use of return periods should be avoided.
<b>Communities and Local Government (CLG)</b>	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. Provides funding to and agrees expenditure plans for Local Authorities.
<b>Core Strategy</b>	A Development Plan Document setting out the spatial vision and strategic objectives of the planning framework for an area, having regard to the Community Strategy.
<b>Community Infrastructure Levy (CIL)</b>	A locally agreed sum levied upon developers to be used as funding for strategic infrastructure needed to support the development. This can include flood risk management infrastructure.
<b>Critical infrastructure</b>	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.
<b>Department for Environment, Food and Rural Affairs (Defra)</b>	Department that brings together the interests of farmers and the countryside; the environment and the rural economy; the food we eat, the air we breathe and the water we drink.
<b>DG5 Register</b>	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.
<b>Environment Agency (EA)</b>	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 and Wales today and for future generations. The organisation is responsible for wide-ranging matters, including the management of all forms of flood risk, water resources, water quality, waste regulation, pollution control, inland fisheries, recreation, conservation and navigation of inland waterways. It will also have a new strategic overview for all forms of inland flooding.
<b>Environment Agency Flood Zones</b>	Flood zones on the maps produced by Environment Agency providing an indication of the probability of flooding (from rivers and the coast) within all areas of England and Wales.
<b>Exceedance flows</b>	Excess flow that appears on the surface once the capacity of the underground drainage system is exceeded
<b>FCERM policy</b>	Sets out the principles that should guide decision making on the sustainable management of flood and coastal erosion risk in England

<b>Flood Defence Grant in Aid (FDGIA)</b>	Central government funding to Flood Risk Management Authorities in order to manage flood and coastal erosion risk in England
<b>Flood Risk Assessment (FRA)</b>	An assessment of the flood risk to and from a proposed new development to demonstrate how flood risk from all sources of flooding to the development itself and flood risk to others will be managed now and taking climate change into account (see PPS25 paragraph E8 to E10 and paragraphs 3.98 to 3.94 of the PPS25 Practice Guide).
<b>Flood Risk Management Plan</b>	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).
<b>Flood Risk Regulations 2009</b>	Legislation that transposed the Floods Directive in England and Wales.
<b>Flood (Risk Management) Strategy</b>	An Environment Agency output which provides a detailed assessment of flood risks (from rivers and the sea) at a location or for a whole catchment and the preferred management measures.
<b>Flood Map for Surface Water (FMfSW)</b>	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. The map better represents the mechanisms that cause surface water flooding than the current 2009 Areas Susceptible to Surface Water Flooding map as it takes account of more localised datasets and maps two storm likelihoods (1 in 30 and 1 in 200 year events). This map has now been superseded by the Risk of Flooding from Surface Water map.
<b>Floods and Water Management Act (2010)</b>	The Flood and Water Management Act (FWMA) 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 places new responsibilities on the Environment Agency, local authorities and property developers (among others) to manage the risk of flooding.
<b>Floods Directive</b>	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.
<b>Grant in Aid</b>	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.
<b>Greenfield runoff rate</b>	The rate of runoff which would occur from a site that was undeveloped and undisturbed.
<b>Highways England</b>	The national body responsible for managing, maintaining and improving England's motorways and trunk roads.
<b>Hotspot</b>	A hotspot is an area perceived and identified locally as being at greatest risk of surface water flooding
<b>LiDAR</b>	Light Detection and Ranging - high accuracy, high resolution elevation data derived from airborne sources.
<b>Local Development Framework (LDF)</b>	A non-statutory term used to describe a folder of documents which includes all the local planning authority's Local Development Documents (LDDs). The local development framework will also comprise the statement of community involvement, the local development scheme and the annual monitoring report.
<b>Local Planning Authority (LPA)</b>	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.
<b>Local Resilience Forums (LRF)</b>	LRFs are multi-agency forums, bringing together all organisations that have a duty to co-operate under the Civil Contingencies Act, and those involved in responding to emergencies. They prepare emergency plans in a co-

	ordinated manner.
<b>Main River</b>	Main Rivers are watercourses marked as such on a main river map. Generally main rivers are larger streams or rivers, but can be smaller watercourses. Main Rivers are determined by Defra in England, and the Environment Agency has legal responsibility for them.
<b>National Planning Policy Framework (NPPF)</b>	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 to promote sustainable growth. Further information as to how this should be applied is detailed in Planning Practise Guidance.
<b>Net Present Value (NPV)</b>	The discounted value of a range of costs and benefits. NPV is used to describe the difference between the present value of costs and benefits in future years.
<b>Ordinary watercourse</b>	An ordinary watercourse is any other 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 for such watercourses.
<b>Partner</b>	Defined as someone with responsibility for decisions or actions. They share joint responsibility for these decisions/actions.
<b>Pitt Review</b>	An independent review of the 2007 summer floods by Sir Michael Pitt, which provided recommendations to improve flood risk management in England.
<b>Pluvial flooding</b>	'Pluvial' flooding (or surface runoff flooding) is caused by rainfall and is that flooding which occurs due to water ponding on or flowing over the surface before it reaches a drain or watercourse.
<b>Rate Support Grant</b>	Funding mechanism from CLG to Local Authorities, which provides funding for all Local Authority responsibilities.
<b>Resistance measures</b>	Resistance measures are designed to keep flood water out of properties and businesses, and could include flood guards for example.
<b>Regional Flood and Coastal Committee (RFCC)</b>	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 for three purposes:
<b>Riparian owners</b>	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.
<b>Risk</b>	In flood risk management risk is defined as the probability of a flood occurring x consequence of the flood.
<b>River Basin Management Plans (RBMP)</b>	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.
<b>Sequential Test</b>	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.
<b>Severn Trent Water</b>	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.
<b>Sewerage Management Plan (SMP)</b>	A Sewerage Management Plan is the output from the SRM process.
<b>Strategic Flood Risk Assessment (SFRA)</b>	A SFRA provides information on areas at risk from all sources of flooding. The SFRA should form the basis for flood risk management decisions, and provides the basis from which to apply the Sequential Test and Exception Test (as defined in PPS25) in the development allocation and development control process (see paragraph E5 to E7 of PPS25 and paragraphs 3.39 to 3.79 of the PPS25 Practice Guide).
<b>Supplementary Planning Document (SPD)</b>	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.



<b>Surface water flooding</b>	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.
<b>Sustainable Drainage Systems (SuDS)</b>	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.
<b>The Black Country</b>	The administrative areas of Dudley, Sandwell, Walsall and Wolverhampton.
<b>The Black Country authorities</b>	Dudley Metropolitan Borough Council (MBC), Sandwell, Metropolitan Borough Council (MBC), Walsall Council and Wolverhampton City Council.
<b>Risk of Flooding form Surface Water map</b>	The Risk of Flooding form Surface Water map was published publically 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.
<b>Water and sewerage company (WaSC)</b>	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.
<b>Water Framework Directive (WFD)</b>	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.

## 5.2 PRESENT DAY FLOOD RISK

- 5.2.1 As LLFAs, the Black Country authorities are responsible for managing flood risk associated with 'local' sources – namely surface water, groundwater and ordinary watercourses.
- 5.2.2 The flood risk associated with Main Rivers is managed by the Environment Agency and the best source of information for this is on their website, which can be found at <http://www.environment-agency.gov.uk>. There are limited Flood Alert/Warning Areas within the Borough but individuals within these or Flood Alert Areas are recommended to sign up to the free Floodline Warnings Direct offered by the Environment Agency.
- 5.2.3 Flood risk associated with the sewer network is the responsibility of the water and sewage company, Severn Trent Water. This is formally defined as a duty to provide, maintain and operate systems of public sewers and works for the purpose of effectually draining their area of responsibility. This is formally specified in Section 94 of the Water Industry Act 1991 (WIA 1991).
- 5.2.4 The following sections set out information with regards to local flood risk in the Black Country.

### SURFACE WATER FLOOD RISK

- 5.2.5 The Black Country is a highly urbanised area and as such surface water flooding is an issue across the area covered by this Strategy.
- 5.2.6 The Preliminary Flood Risk Assessments published in 2011 set out the locally agreed surface water information. The locally agreed surface water information for each of the four authorities is set out below:
  - Dudley MBC selected the Environment Agency's Flood Maps for Surface Water, 1 in 200 annual probability event flood risk areas;
  - Sandwell MBC was selected the Environment Agency's Flood Maps for Surface Water, 1 in 200 annual probability event flood risk areas;
  - Walsall Council does not have locally agreed surface water information. As such the PFRA stated that assessment of flood risk would primarily rely on a technical review of Environment Agency's Flood Maps for Surface Water
  - Wolverhampton City Council selected Environment Agency's Flood Map for Surface Water
- 5.2.7 Following the publication of the PFRAs more detailed mapping of surface water flood risk was produced by the Environment Agency which superseded the Flood Map for Surface Water, the Risk of Flooding from Surface Water map.
- 5.2.8 Sandwell MBC has produced a Surface Water Management Plan which undertook detailed assessments of surface water flood risk at key locations across the borough. Detailed hydraulic models of key hotspot locations were produced for, Thimblemill Brook and Upper St Mary's Road, Tipton Brook, Yew Tree estate, Elm Terrace and Tower Road Brook.
- 5.2.9 In all areas apart from those covered by the Sandwell SWMP, all LLFA's have adopted the Environment Agency's Risk of Flooding from Surface Water mapping and the best source of information on local flood risk. This is the third generation national surface water flood risk map produced by the Environment Agency in 2013. It assesses flooding scenarios as a result of rainfall with the following chance of occurring in any given year;

1 in 30, 1 in 100 and 1 in 1000. For each scenario the extent, maximum depth and maximum velocity of surface water flooding is available.

## GROUNDWATER FLOOD RISK

- 5.2.10 In general groundwater flood risk in the Black Country is relatively low, although high water tables have been experienced along the Sandwell/Walsall border (Jacobs, 2009) and parts of the Wolverhampton and Sandwell boroughs may be susceptible to groundwater recharge following the discontinuing of industrial abstractions (Scott Wilson, 2009).
- 5.2.11 The Wolverhampton PFRA noted that localised groundwater flooding has occurred across eastern Wolverhampton where it has mostly affected gardens and allotments. The general areas of reported groundwater flooding include Newbolds, Scotlands, Wood Hayes, Merry Hill, Bradmore and Blakenhall.

## FLOOD RISK FROM ORDINARY WATERCOURSES

- 5.2.12 The Environment Agency's Risk of Flooding from Rivers and the Sea is the best source of information for fluvial flooding. As mentioned above most of the flood risk areas shown online are associated with Main Rivers, but a number of ordinary watercourses have been mapped to show areas at risk.
- 5.2.13 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 – <http://www.environment-agency.gov.uk>.
- 5.2.14 In the Black Country flood events from ordinary watercourses historically have often been associated with poor maintenance of culverts and/or trash screens leading to blockages and subsequent flooding. This has led to the formation of pre-flood action plans to ensure critical assets are assessed / cleared prior to a predicted significant storm.

## 5.3 CHANGES TO FLOOD RISK IN THE FUTURE FROM 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 well understood. 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 as guidance in the Technical Guidance to the NPPF (Department for Communities and Local Government, 2012). This is shown in Table 3.



**Table 3 – 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
<b>Peak rainfall intensity</b>	+5%	+10%	+20%	+30%
<b>Peak river flow</b>	+10%	+20%		

5.3.2 The UK Government's most recent Climate Change Risk Assessment, or 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), and 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 affected) 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 to 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 the Black Country in a quantifiable way, which will then be communicated through future updates to this document.
- 5.3.4 The increase in peak rainfall and river flows associated with climate change in the Black Country are expected to increase flood risk. Without continued investment in flood risk management and surface water drainage networks this will lead to more people and properties being at risk.
- 5.3.5 Climate change will be incorporated in the assessment of flood risk for all capital schemes in the Black Country using the allowances set out by the Environment Agency's guidance; Adapting to Climate Change: Advice for Flood and Coastal Erosion Risk Management Authorities.
- 5.3.6 It is a requirement of the NPPF that the design of drainage systems for new development takes account of the impacts of climate change over the anticipated lifetime of the development. For this purpose the allowances set out in Table 3 should be applied.

## **5.4 CHANGES TO FLOOD RISK IN THE FUTURE FROM URBAN CREEP**

- 5.4.1 Not all development is subject to planning procedures or the development control process, and therefore its impact on flooding is less likely to be controlled. Urban creep such as property extensions is an example of this.
- 5.4.2 Urban Creep increases the amount of hard surfaces in towns, reducing the ability of water to filter into the ground and increasing the volume of water that has to run off into drains. In addition, it increases the peak flows within the surface water drainage system. This can increase the risk of surface water flooding in urban areas as drainage systems are unable to cope with the increased demand.
- 5.4.3 Retrofitting Sustainable Drainage Systems (SuDS) into existing urban environments is a potential approach to combatting this increase in local flood risk. These measures can manage the rate of surface water runoff from the urban environment, reducing the risk of flooding.

## 6 OBJECTIVES

- 6.1.1 To support the strategic vision for the management of local flood risk in the Black Country, the following six objectives have been developed to support the delivery of the Strategy. They have been developed to be consistent with the objectives of the national FCERM strategy and to drive local flood risk management in the Black Country. They are set out in Table 4 and discussed in detail in the following sections.

**Table 4 – Black Country LFRMS Objectives**

Objective	
O1	Understanding and communicating flood risk in the Black Country.
O2	Managing the likelihood and impacts of flooding.
O3	Helping the Black Country's citizens to manage their own risk.
O4	Ensuring appropriate development in the Black Country.
O5	Improving flood prediction, warning and post flood recovery.
O6	Work in partnership with others to deliver the local strategy.

### 6.2 OBJECTIVE 1 – UNDERSTANDING AND COMMUNICATING FLOOD RISK IN THE BLACK COUNTRY

- 6.2.1 Understanding the causes and mechanisms of local flood risk is essential to enable efficient and effective management of the risk. Recent flooding in the Black Country has highlighted that often the causes are not simple 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 a site's true risk from flooding.
- 6.2.2 Gaining a better understanding of risk in the study area will be an ongoing process but it is acknowledged that some issues – such as groundwater flood risk – are not well understood.
- 6.2.3 With flood risks expected to increase due to climate change, greater understanding will enable the local authorities within The Black Country to better mitigate against potential future problems and advise strategic planners for allocated development.
- 6.2.4 The Action Plan (Appendix A) demonstrates how this objective has and will be achieved for the Black Country.

### 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 reduce the frequency of flooding and to lessen its impacts on The Black Country's population.
- 6.3.2 Understanding, identifying and quantifying flood risk is the first step to manage and reduce the likelihood and impacts of flooding. Where possible management schemes and funding opportunities will be explored to actively improve the flood risk. These will

be prioritised to ensure that the most beneficial measures are implemented first. This is especially important where budgetary constraints mean that not all viable measures can be implemented.

- 6.3.3 Where local flood risk issues are identified, all available funding sources will be explored to progress potential solutions. In developing measures to tackle local flood risk, it is important to involve all relevant partners, both risk management authorities and others, including members of the public.
- 6.3.4 Another important aspect of local flood risk management is actions that are taken when flooding is happening. Ensuring an efficient response from the relevant authorities and providing information to the public can significantly reduce the impact of flooding and reduce the recovery period.
- 6.3.5 The Action Plan (Appendix A) demonstrates how this objective has and will be achieved for the Black Country.

## **6.4 OBJECTIVE 3 – HELPING THE BLACK COUNTRY’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 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 and are more likely to plan for any issues that arise. The Black Country authorities are committed to improving the public’s awareness of flooding and consulting them on local flood risk management issues.
- 6.4.3 It is also very important to ensure that the public is aware of and can comment on flood risk management schemes that are proposed for the Black Country.
- 6.4.4 The Action Plan (Appendix A) demonstrates how this objective has and will be achieved for the Black Country.

## **6.5 OBJECTIVE 4 – ENSURING APPROPRIATE DEVELOPMENT IN THE BLACK COUNTRY**

- 6.5.1 The FWMA10 increases the ability of the local councils as LLFA’s and LPA’s to positively affect development to make it more sustainable and reduce risks of flooding both on and off site.
- 6.5.2 Each of the Black Country authorities are committed to working with developers to produce places to live where flood risk is minimal and there is a positive impact on the wider area.
- 6.5.3 One of the key ways of doing this is through planning policy, with ENV5 of the Black Country Core Strategy (see Appendix C) being the most important local document, and additional reference provided through the NPPF and SFRA.
- 6.5.4 Following consultation on the implementation of Schedule 3 of the Flood and Water Management Act 2010 regarding the provision for ensuring SuDS in new development, amendments have been made to the planning system. Non statutory technical standards for sustainable drainage systems were published by Defra in March 2015

alongside changes to the statutory consultees for major planning applications with regards to surface water drainage.

- 6.5.5 The changes to statutory consultees were implemented on 15<sup>th</sup> April 2015. The Town and Country Planning (Development Management Procedure)(England) Order 2015 – Schedule 4 - Consultations before the grant of permission has made LLFAs statutory consultees for major development planning applications with surface water drainage. Assessment of surface water drainage provision for all other types of development (not considered to be major development) is the responsibility of local planning authorities.
- 6.5.6 The Action Plan (Appendix A) demonstrates how this objective has and will be achieved for the Black Country.

## **6.6 OBJECTIVE 5 – IMPROVING FLOOD PREDICTION, WARNING AND POST FLOOD RECOVERY**

- 6.6.1 The impacts of flooding can also be minimised through improved 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 flooding occurs the speedy recovery of businesses and individuals is important for the health and wellbeing of those affected and the economic output in the Black Country. Returning people to their homes also has the effect of minimising 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 has and will be achieved for the Black Country.

## **6.7 OBJECTIVE 6 – WORK IN PARTNERSHIP WITH OTHERS TO DELIVER THE LOCAL STRATEGY**

- 6.7.1 Working in partnership both internally and externally with the stakeholders and partners identified in Section 4 will be critical to managing flood risk appropriately.
- 6.7.2 To ensure that this occurs effectively the Black Country Authorities have developed partnership working arrangement involving the local authority key officers and representatives from other risk management organisations, principally the Environment Agency and Severn Trent Water. These arrangements enable sharing of information and knowledge between organisations to ensure the efficient use of resources for flood risk management. In addition opportunities for flood risk management schemes that deliver outcomes that are beneficial to multiple organisations can be identified.
- 6.7.3 The Action Plan (Appendix A) demonstrates how this objective has and will be achieved for the Black Country.

## **6.8 MEASURES**

- 6.8.1 To enable the objectives of this strategy to be delivered, this section sets out a range of measures that will be undertaken by the Black Country authorities. These include a

range of short and long term measures that will be undertaken by the LLFAs in combination with their partners. These are set out below for each objective and further detail of how these measures will be delivered is given in the LFRMS Action Plan (Appendix A).

#### **Objective 1: Understanding and communicating flood risk in the Black Country**

Measure 1A: Develop a Flood Risk Management Plan for the West Midlands Cluster

Measure 1B: Investigate locally significant incidents of flooding identifying sources and remedial actions with partners

Measure 1C: Review and update the Preliminary Flood Risk Assessments for the Black Country

Measure 1D: Develop and continue to maintain a register of flood risk management assets

Measure 1E: Engage with local communities to gain information of flood risk issues

Measure 1F: Share knowledge and information on local flood risk with the residents of the Black Country

Measure 1G: Ensure latest information is used in assessing local flood risk

#### **Objective 2: Managing the likelihood and impacts of flooding**

Measure 2A: Work with partners to reduce the impacts of flooding by targeting and prioritising maintenance at high risk locations and assets, enabling an efficient response to, and recovery from, flooding incidents.

Measure 2B: Develop flood risk management schemes led by the Black Country authorities, seeking to make best use of available funding

Measure 2C: Work with partners to develop flood risk management schemes led by third parties, riparian landowners and stakeholders

Measure 2D: Work to ensure ongoing management of existing flood risk and drainage assets

Measure 2E: Work to ensure compliance of all Local Authority owned assets with the Reservoirs Act

#### **Objective 3: Helping the Black Country's citizens to manage their own risk**

Measure 3A: Continue to work with community flood groups and other local stakeholders

Measure 3B: Work with residents to communicate the risks of flooding

Measure 3C: Work with residents and landowners to educate them with regards to their responsibilities for watercourse management

Measure 3D: Encourage local involvement in the development of flood risk management schemes

Measure 3E: Encourage residents to share information on flooding incidents

Measure 3F: Share knowledge and information with communities and residents

#### **Objective 4: Ensuring appropriate development in the Black Country**

Measure 4A: Develop a planning process to create clear advice and direction to developers on flood risk, drainage and SuDS.

Measure 4B: Undertake consenting activities for ordinary watercourses

Measure 4C: Promote the use of Sustainable Drainage Systems in new development



Measure 4D: Ensure compliance with Black Country Core Strategy (ENV5 Flood Risk) principals and objectives

**Objective 5: Improving flood prediction, warning and post flood recovery**

Measure 5A: Work with partners to minimise the recovery time for residents and businesses from flooding events

Measure 5B: Establish a co-ordinated approach to the provision of temporary flood risk management measures.

Measure 5C: Work with partners to improve communications and advice given during flooding events.

Measure 5D: Work with partners to understand trigger levels for local flooding events and develop local flood warning systems

**Objective 6: Work in partnership with others to deliver the local strategy**

Measure 6A: Engage in regional networks for sharing of knowledge and best practice

Measure 6B: Improve the mechanisms of sharing of data and information between partners

Measure 6C: Engage with neighbouring LLFAs to facilitate a catchment based approach

Measure 6D: Continue to engage with flood action groups and other community groups in the delivery of local flood risk management

## 7 FUNDING OPPORTUNITIES

- 7.1.1 This Strategy has set out a range of measures to help achieve its objectives. These include LLFA processes and systems, partnership working with others, working with communities to improve their resilience to flooding and promotion of capital local flood risk management schemes. Delivery of these measures depends on sufficient funding being available, either from ongoing revenue funding or project based support for capital schemes.
- 7.1.2 The funding available for any measure will be linked to the outcomes it will provide. Measures that deliver benefits beyond flood risk management, such as enhanced ecosystems, public amenity, economic growth or cultural heritage, are likely to attract funding from alternative sources beyond those typically used to support flood risk management. Funding is therefore based on the economic viability of schemes; not all potential flood alleviation schemes will be viable and not all will achieve funding.
- 7.1.3 The following sections describe the available sources of funding that could be used to support the measures outlined in this Strategy. The Black Country authorities and their partners have already achieved funding for flood alleviation schemes in the Black Country from various sources, including Local Levy, Grant in Aid and contributions from both developers and landowners.

### 7.2 NATIONAL FUNDING

#### FLOOD AND COASTAL EROSION RISK MANAGEMENT GRANT IN AID FUNDING

- 7.2.1 Defra has the national policy responsibility for Flood and Coastal Erosion Risk Management (FCERM) and provides funding through Grant in Aid (GiA) to the Environment Agency, who then administers grants for capital projects; Local Authorities are one partner able to request such grants.
- 7.2.2 A contribution to flood risk management schemes from the Flood Defence Grant in Aid (FDGiA) funding will be provided whenever there is a positive ratio of benefit to cost. However, a positive ratio does not necessitate full funding and the formula determines the amount of Central Government funds based on the calculated ratio.
- 7.2.3 Funding levels for each scheme are linked to the number of households protected, the damages prevented, environmental benefits, amenity improvements, agricultural productivity and economic benefits. The payment rates for household protection will vary depending on the index of multiple deprivation; with more deprived households receiving higher payment rates. This ensures that schemes identified within poorer areas are more likely to receive full funding from Central Government.