### Cabinet – 29 October 2015

## Proposed Consultation on a Local Strategy for Flood Risk Management in the Black Country

**Portfolio:** Councillor Louise Harrison, Clean and Green

Related portfolios: Councillor Andrew, Economy, Infrastructure and Development

**Service:** Engineering and Transportation

Wards: All

Key decision No

Forward plan No

### 1. Summary

- 1.1 This report seeks approval to carry out consultation on a Local Strategy for Flood Risk Management in the Black Country (LFRMS).
- 1.2 The Flood and Water Management Act 2010 (FWMA 2010) places a duty on the Council, as the Lead Local Flood Authority, to develop, maintain, apply and monitor the implementation of a LFRMS. The FWMA 2010 places a duty on the Council to consult both the public and other risk management authorities about its local flood risk management strategy. The consultation period is proposed to last 6 weeks. The Department for Environment, Food and Rural Affairs (DEFRA) has stated that all strategies should be published by April 2016.
- 1.3 In April 2014 the Association of Black Country Authorities (ABCA) agreed the principle of joint working arrangements between Dudley, Walsall, and Sandwell Metropolitan Borough Councils and Wolverhampton City Council in respect of flood risk management functions. Under these joint working arrangements a Local Strategy for Flood Risk Management in the Black Country (LFRMS) is prepared and ready for public consultation. An outline and non technical summary is included as **Appendix A**. The full LFRMS is available on the Council's website together with consultee response forms.
- 1.4 LFRMSs are public documents which explain the local flood risk, clarify who is responsible for managing that risk and sets out an action plan for how the Lead Local Flood Authority will manage flood risk associated with surface water, groundwater and ordinary water courses. The Local Strategy complements a number of other planning policies, legislative requirements and flood risk strategies including the National Planning Framework, The Flood & Water Management Act 2010, the Black Country Core Strategy, the Black Country Strategic Flood Risk Assessment and the Preliminary Flood Risk Assessments for each authority.

1.5 Following consultation a Report will be made to a future Cabinet on the outcome of the consultation and to consider approval of the LFRMS in the Black Country.

### 2. Recommendations

- 2.1 That Cabinet approve the draft LFRMS (Local Strategy for Flood Risk Management) in the Black Country for consultation.
- 2.2 To present the Corporate and Public Service Overview and Scrutiny Committee opportunity to receive a report at its meeting of 26 November and consider and comment on the LFRMS.
- 2.3 That Cabinet notes that a further report will be presented to Cabinet on 3 February 2016 on the outcome of the consultation and to consider approval of the LFRMS in the Black Country.

### 3. Report detail

- 3.1 Following the severe flooding during the summer of 2007, the government commissioned an independent review (the 'Pitt Review') which in 2008 recommended that local authorities should lead on the management of local flood risk, working in partnership with other organisations.
- 3.2 Two key pieces of legislation have brought this forward, the Flood Risk Regulations (2009) which transpose the EU Floods Directive into UK Law and the Flood and Water Management Act (2010).
- 3.3 The Council is now a Lead Local Flood Authority (LLFA) and has relatively new powers and statutory duties to manage and co-ordinate local flood risk management activities. Local flood risk means flooding from surface water (overland runoff), groundwater and smaller watercourses (known as Ordinary Watercourses). The Council does this by working together with other organisations including the Environment Agency, which manages flooding from generally larger rivers (known as Main Rivers, such as the River Tame) and infrastructure/utility providers, such as Severn Trent Water and Highways England.
- 3.4 The first task of the LLFA was to prepare a Preliminary Flood Risk Assessment (PFRA) which is an assessment of the local flood risk across the Borough of Walsall. In April 2011 Cabinet considered and approved the PFRA and it is published on the Council's website.
- 3.5 There are both strategic and operational elements to the role of the LLFA. Strategically, the Council needs to develop, maintain, apply and monitor a LFRMS. An outline of the contents of the LFRMS is included as **Appendix A** of this Report. Copies of the full LFRMS are available for information within the political group rooms and can also be viewed on the Council's committee information pages.

3.6 Operationally, the Council investigates flooding incidents, holds a flood risk management asset database and has powers to designate third party assets where they have an impact on flood risk. Additionally the Council undertakes various land drainage activities, including consenting to works and enforcement on Ordinary Watercourses.

### 4. Council priorities

- 4.1 Minimising the risk of flooding supports the Council's priorities as follows:
  - Protecting business from adverse disruption and the risk of flooding will: support business to thrive and support local people into work.
  - Ensuring property and transportation are not affected by flooding will: improve health and well being, including independence for older people and the protection of vulnerable people.
  - Protecting communities from flooding events will help: create safe, sustainable and inclusive communities.
  - Protecting schools and supporting infrastructure from flooding risks will help

     improve, Safeguard the Learning and the Life Chances for Children and
     Young People, raising aspirations.

### 5. Risk management

5.1 The intention of a LFRMS is to set out how risks will be identified and controlled. This process will ultimately reduce the potential for flooding across the Black Country.

### 6. Financial implications

6.1 The Council's contribution towards the cost of preparing the LFRMS in the Black Country is £7,000 and is funded from an existing revenue budget managed by Engineering and Transportation Service.

### 7. Legal implications

- 7.1 Section 9 of the Flood and Water Management Act 2010 (FWMA 2010) places a duty on the council, as Lead Local Flood Authority, to develop, maintain, apply and monitor the implementation of a LFRMS.
- 7.2 The FWMA 2010 states that the strategy must include:
  - The risk management authorities in the authority's area;
  - The risk management functions that may be exercised by those authorities;
  - The objectives for managing local flood risk;
  - The measures proposed to meet those objectives;
  - How and when the measures are expected to be implemented (action plan);

- The costs and benefits of those measures, and how they are to be paid for;
- The assessment of local flood risk;
- How and when the strategy is to be reviewed; and
- How the strategy contributes to wider environmental objectives.
- 7.3 The FWMA 2010 places a duty on the Council to consult both the public and other risk management authorities about its local flood risk management strategy.

### 8. Property implications

8.1 None as a direct result of this Report.

### 9. Health and wellbeing implications

9.1 Minimising flood risk will improve the health and wellbeing of those potentially affected.

### 10. Staffing implications

10.1 None

### 11. Equality implications

11.1 An equality impact assessment has not been undertaken as carrying out public consultation on the LFRMS in the Black Country is not believed to impact significantly on people with protected characteristics. However the consultation process itself will be made as accessible as possible.

### 12. Consultation

12.1 The intention of this report is to gain Cabinet approval to start public consultation.

### **Background papers**

Flood and Water Management Act 2010

Draft Black Country Local Flood Risk Management Strategy

Preliminary Flood Risk Assessment

### **Author**

John Roseblade Group Manager (Highways & Environment) Engineering and Transportation Service Economy & Environment Directorate

### **2** 01922 654391

 ${\ oxdotsup{\ensuremath{ox{\boxtimes}}}}\ {\ \underline{\ John.Roseblade@walsall.gov.uk}}$ 

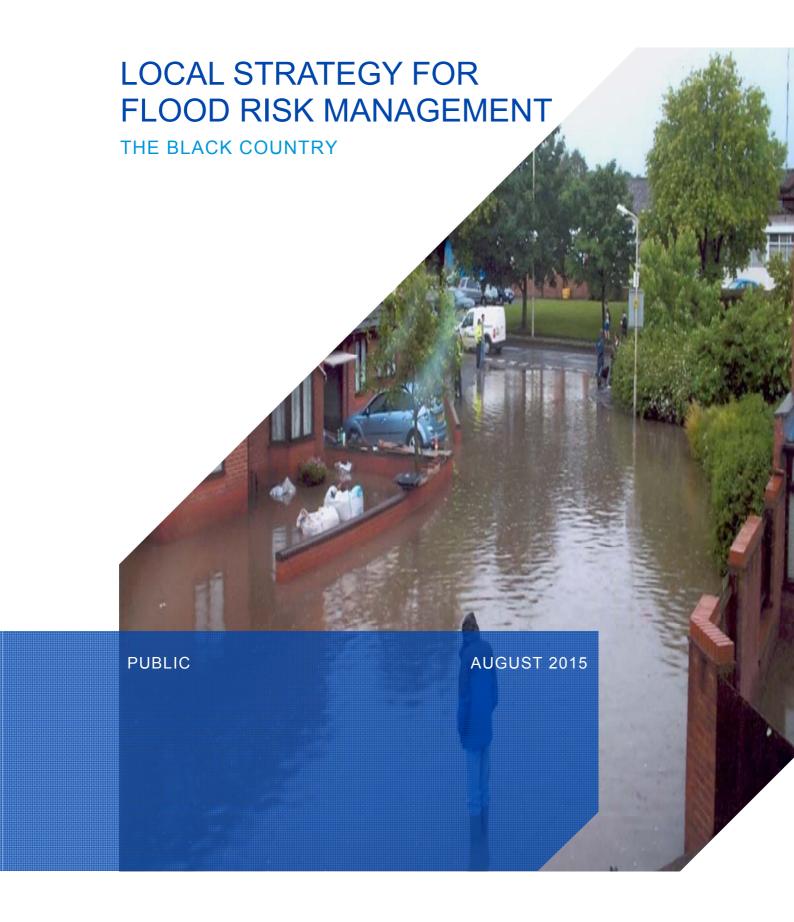
Simon Neilson Executive Director

19 October 2015

D. .

Councillor Louise Harrison Portfolio Holder

19 October 2015





# LOCAL STRATEGY FOR FLOOD RISK MANAGEMENT

**The Black Country** 

### **Public**

Project no: 50600596 Date: August 2015

### WSP | Parsons Brinckerhoff

One Queens Drive Birmingham B5 4PJ West Midlands United Kingdom

Tel: +44 121 352 4700 Fax: +44 121 352 4701 www.wspgroup.com www.pbworld.com



## QUALITY MANAGEMENT

ISSUE/REVISION	FIRST ISSUE	REVISION 1	REVISION 2	REVISION 3
Remarks	Draft			
Date				
Prepared by	Dean Ward			
Signature				
Checked by	Richard Stevens			
Signature				
Authorised by	Andy Smith			
Signature				
Project number	50600596			
Report number	R01-LFRMS			
File reference	50600596- R01- LFRMS			

## PRODUCTION TEAM

### **CLIENT**

Dudley Metropolitan Borough Council Roger Morgan

Sandwell Metropolitan Borough Council Nigel Wilkins

Walsall Council John Roseblade

Wolverhampton City Council Keith Rogers

WSP GLOBAL INC. (WSP)

Associate Director Andy Smith

Senior Engineer Richard Stevens

Senior Engineer Dean Ward

## TABLE OF CONTENTS

TERM	IINOLOGY	1	
	Key Definition	ns	1
GLOS	SSARY	2	
NON-	TECHNICAL EXI	ECUTIVE SUMMARY6	
	What is the I	ocal Strategy for Flood Risk Management?	6
		rision for Flood Risk?	
	Who is invol	/ed?	6
	Is The black	country at a high risk of flooding?	7
	Dudley		7
	Sandwell		7
	Walsall		7
	Wolverhamp	ton	7
		objectives of the Local Strategy?	
	How does th	is impact me?	8
1	INTRODUCT	ONERROR! BOOKMARK NOT DEFINED.	
2	VISION AND	AIMSERROR! BOOKMARK NOT DEFINED.	
	2.1	Vision Error! Bookmark not define	∍d.
	2.2	Aims Error! Bookmark not define	∌d.
3	CONTEXT	ERROR! BOOKMARK NOT DEFINED.	
	3.2	Dudley Borough Error! Bookmark not define	∍d.
	3.3	Sandwell Borough Error! Bookmark not define	∍d.
	3.4	Walsall Borough Error! Bookmark not define	∍d.
	3.5	wolverhampton City Error! Bookmark not define	∍d.
	3.6	Background Legislation Error! Bookmark not define	∍d.
	3.7 not defined	Previous Studies and Existing Strategies/Plans Error! Bookma	ark
4	PARTNERSH	IPERROR! BOOKMARK NOT DEFINED.	
	4.1	Flood Risk Management Authorities Error! Bookmark not define	∍d.
	4.2	Other Partners and Stakeholders Error! Bookmark not define	∍d.
	4.3	Roles and Responsibilities Error! Bookmark not define	∍d.
	4.4	Working in Partnership Error! Bookmark not define	∍d.

5		OF LOCAL FLOOD RISK IN THE BLACKERROR! BOOKMARK NOT DEFINED.
	5.1	Historical Flooding Error! Bookmark not defined.
	5.2	Present Day Flood Risk Error! Bookmark not defined.
	5.3 Bookmark not	Changes to Flood Risk in the Future from Climate ChangeError! defined.
6	OBJECTIVES	ERROR! BOOKMARK NOT DEFINED.
	6.2 black country	Objective 1 – Understanding and communicating flood risk in the <b>Error! Bookmark not defined.</b>
	6.3 <b>Bookmark not</b>	Objective 2 – Managing the likelihood and impacts of flooding <b>Error!</b> defined.
	6.4 own risk	Objective 3 – Helping the Black Country's citizens to manage their <b>Error! Bookmark not defined.</b>
	6.5 Country	Objective 4 – Ensuring appropriate development in The Black <b>Error! Bookmark not defined.</b>
	6.6 recovery	Objective 5 – Improving flood prediction, warning and post flood <b>Error! Bookmark not defined.</b>
	6.7 Strategy	Objective 6 – Work in partnership with others to deliver the Local <b>Error! Bookmark not defined.</b>
	6.8	Measures Error! Bookmark not defined.
7	FUNDING OPPO	ORTUNITIES ERROR! BOOKMARK NOT DEFINED.
	7.2	National Funding Error! Bookmark not defined.
	7.3	Regional Funding Error! Bookmark not defined.
	7.4	Local Funding Error! Bookmark not defined.
	7.5	Combination of Funding Sources Error! Bookmark not defined.
	7.6	Successful Applications Error! Bookmark not defined.
8	STRATEGY IMP	PACTSERROR! BOOKMARK NOT DEFINED.
	8.1 <b>defined.</b>	Impacts on the Black country authorities Error! Bookmark not
	8.2	Impacts on Partners Error! Bookmark not defined.
	8.3 <b>defined.</b>	Impacts on the Black Country's Citizens Error! Bookmark not
	8.4	Impacts on Developers Error! Bookmark not defined.
9	NEXT STEPS	ERROR! BOOKMARK NOT DEFINED.
	9.1	Local Strategy Evolution Error! Bookmark not defined.
	9.2	Working in Partnership Error! Bookmark not defined.
	9.3	Action Plan Review Error! Bookmark not defined.
	9.4	Local Strategy Review Error! Bookmark not defined.

10 BIBLIOGRAPHY.....ERROR! BOOKMARK NOT DEFINED.

### TABLES

- TABLE 1 LEAD LOCAL FLOOD AUTHORITIES' RESPONSIBILITIES WITH REGARDS LOCAL FLOOD RISK MANAGEMENTERROR! BOOKMARK NOT DEFINED.
- TABLE 2 THE ENVIRONMENT AGENCY'S RESPONSIBILITIES WITH REGARDS LOCAL FLOOD RISK MANAGEMENTERROR! BOOKMARK NOT DEFINED.
- TABLE 3 NATIONAL PRECAUTIONARY SENSITIVITY RANGES AS TAKEN FROM
  TABLE 5 IN THE TECHNICAL GUIDANCE TO THE NPPF.ERROR! BOOKMARK NOT DI
  - TABLE ON THE TECHNION CONDITION DANGER ACTAVEN FROM
- TABLE 4 NATIONAL PRECAUTIONARY SENSITIVITY RANGES AS TAKEN FROM TABLE 5 IN THE TECHNICAL GUIDANCE TO THE NPPF. **ERROR! BOOKMARK NOT DI**

### FIGURES

- FIGURE 1 COMBINATION OF POSSIBLE DIFFERENT FUNDING SOURCES TO COVER COSTS OF FLOOD RISK MANAGEMENT SCHEMES**ERROR! BOOKMARK NO**
- FIGURE 2 OVERSIZED CULVERT INSTALLED AT RUSHALL CLOSE, WORDSLEY
  IN 2011......ERROR! BOOKMARK NOT DEFINED.
- FIGURE 3 DEFENCE BUND AND WALL INSTALLED ADJACENT TO RIVER STOUR AT GRANGE CRESCENT, HALESOWEN IN 2012, IN PARTNERSHIP WITH THE ENVIRONMENT AGENCY**ERROR! BOOKMARK NOT DEFIN**

### MAPS

MAP 1 LOCAL AUTHORITY BOUNDARIES FOR THE BLACK

COUNTRY ......ERROR! BOOKMARK NOT DEFINED.

### APPENDICES

APPENDIX A THE BLACK COUNTRY LFRMS ACTION PLAN

APPENDIX B RELEVANT LEGISLATION

APPENDIX C RELEVANT POLICY AND PREVIOUS STUDIES

APPENDIX D FLOOD INVESTIGATION PROCEDURE

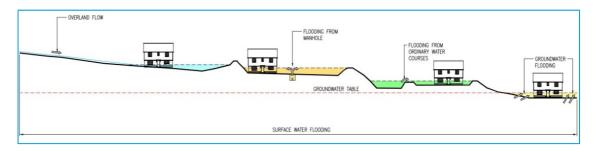
APPENDIX E SANDBAG POLICY

APPENDIX F HISTORIC FLOODING RECORDS

## **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
Area Action Plans (AAP)	A type of Development Plan Document focussed on a specific location or
	area subject to conservation or significant change (e.g. major regeneration).
The Black Country	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.
	A strategic planning tool through which the Environment Agency works with
(CFMP)	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% 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.
	Communities and Local Government is the Government department which
(CLG)	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.
Core Strategy	A Development Plan Document setting out the spatial vision and strategic
one officegy	objectives of the planning framework for an area, having regard to the
	Community Strategy.
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	Department that brings together the interests of farmers and the countryside;
and Rural Affairs (Defra)	the environment and the rural economy; the food we eat, the air we breathe
	and the water we drink.
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 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.
Environment Agency Flood Zones	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.
Exceedance flows	Excess flow that appears on the surface once the capacity of the
	underground drainage system is exceeded
FCERM policy	Sets out the principles that should guide decision making on the sustainable
	management of flood and coastal erosion risk in England
Flood Defence Grant in Aid (FDGIA)	Central government funding to Flood Risk Management Authorities in order
,	to manage flood and coastal erosion risk in England
Flood Risk Assessment (FRA)	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).  Flood Risk Management Plan  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 transposed the Floods Directive in England and Wales.  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.  The Flood Map for Surface Water  (FMfSW)  Flood Map for Surface Water  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 form Surface Water map.  Floods 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
change into account (see PPS25 paragraph E8 to E10 and paragraphs 3.98 to 3.94 of the PPS25 Practice Guide).  Flood Risk Management Plan  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 transposed the Floods Directive in England and Wales.  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.  Flood Map for Surface Water  The Flood Map for Surface Water The lood 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 form Surface Water map.  Floods and Water Management Act  The Flood and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
Flood Risk Management Plan  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 transposed the Floods Directive in England and Wales.  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.  Flood Map for Surface (FMfSW)  Water 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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
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  Flood (Risk Management) Strategy  Flood (Risk Management) Strategy  Flood Map for Surface Water (FMfSW)  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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
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 transposed the Floods Directive in England and Wales.  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.  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. 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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
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 transposed the Floods Directive in England and Wales.  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.  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. 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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
b) the proposed measures for achieving those objectives (including measures required by any provision of an Act of subordinate legislation).  Flood (Risk Management) Strategy  Flood (Risk Management) Strategy  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.  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. 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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
Flood Risk Regulations 2009  Legislation that transposed the Floods Directive in England and Wales.  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.  Flood Map for Surface Water 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 form Surface Water map.  Floods and Water Management Act (2010)  The Flood and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
Flood Risk Regulations 2009  Legislation that transposed the Floods Directive in England and Wales.  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.  Flood Map for Surface Water 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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
Flood (Risk Management) Strategy  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.  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. 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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
flood risks (from rivers and the sea) at a location or for a whole catchment and the preferred management measures.  Flood Map for Surface Water  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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
and the preferred management measures.  Flood Map for Surface Water  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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
Flood Map for Surface Water Surface Water 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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
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 form Surface Water map.  The Flood and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
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 form Surface Water map.  The Flood and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
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 form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday (2010)  The Flood and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
(1 in 30 and 1 in 200 year events). This map has now been superseded by the Risk of Flooding form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
This map has now been superseded by the Risk of Flooding form Surface Water map.  Floods and Water Management Act (FWMA) came into effect on Monday (2010)  The Flood and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
Water map.  Floods and Water Management Act (2010)  Water map.  The Flood and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
Floods and Water Management Act (FWMA) came into effect on Monday (2010)  The Flood and Water Management Act (FWMA) came into effect on Monday 12th April 2010. The Act takes forward a number of recommendations from
(2010) 12th April 2010. The Act takes forward a number of recommendations from
the Fitt Neview into the 2007 hours and places new responsibilities of the
Environment Agency, local authorities and property developers (among
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.  Grant in Aid Grant in Aid funding is provided by Defra to the Environment Agency to
Grant in Aid 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.
Greenfield runoff rate The rate of runoff which would occur from a site that was undeveloped and
undisturbed.
Highways England  The national body responsible for managing, maintaining and improving
England's motorways and trunk roads.
A hotspots 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
derived from airborne sources.
Local Development Framework A non-statutory term used to describe a folder of documents which includes
(LDF) 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.
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 those involved in
responding to emergencies. They prepare emergency plans in a co-
ordinated manner.
Main River 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.
National Planning Policy Framework	The National Planning Policy Framework was published in March 2012. It
(NPPF)	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
Not Present Value (NPV)	applied is detailed in Planning Practise Guidance.  The discounted value of a range of costs and benefits. NPV is used to
Net Present Value (NPV)	describe the difference between the present value of costs and benefits in
	future years.
Ordinary watercourse	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.
Partner	Defined as someone with responsibility for decisions or actions. They share
Pitt Review	joint responsibility for these decisions/actions.  An independent review of the 2007 summer floods by Sir Michael Pitt, which
I III IZEAIEM	provided recommendations to improve flood risk management in England.
	<u></u>
Pluvial flooding	'Pluvial' flooding (or surface runoff flooding) is caused by rainfall and is that
	flooding which occurs due to water ponding on or flowing over the surface
Data Comment Commission	before it reaches a drain or watercourse.
Rate Support Grant	Funding mechanism from CLG to Local Authorities, which provides funding for all Local Authority responsibilities.
Resistance measures	Resistance measures are designed to keep flood water out of properties and
	businesses, and could include flood guards for example.
	The Regional Flood and Coastal Committee (RFCC) is a committee
Committee (RFCC)	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:
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
Dial	allow flow to pass through freely.
Risk	In flood risk management risk is defined as the probability of a flood occurring x consequence of the flood.
River Basin Management Plans	A management plan for all river basins required by the Water Framework
(RBMP)	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,
Sequential Test	and act as the main reporting mechanism to the European Commission.  A planning principle that seeks to identify, allocate or develop certain types
oequentiai rest	or locations of land before others. The test is designed to guide development
	away from areas at high risk from flooding.
Severn Trent Water	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
Sowerage Management Blon (CMB)	living in the Midlands region of England and also certain regions of Wales.
Sewerage Management Plan (SMP)  Strategic Flood Risk Assessment	A Sewerage Management Plan is the output from the SRM process.  A SFRA provides information on areas at risk from all sources of flooding.
(SFRA)	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
Sovern Trent Water (ST)	3.79 of the PPS25 Practice Guide).
Severn Trent Water (ST)	Water company providing foul and surface water services to the borough and potable water to parts of the borough.
Supplementary Planning Document	·
(SPD)	that may cover a range of issues, thematic or site specific, and provides
	further detail of policies and proposals in a 'parent' Development Plan
Surface water flooding	Document.
SUITAGE WATER HOOGING	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.
The Black Country	The administrative areas of Dudley, Sandwell, Walsall and Wolverhampton.
The Black Country authorities	Dudley Metropolitan Borough Council (MBC), Sandwell, Metropolitan Borough Council (MBC), Walsall Council and Wolverhampton City Council.
Risk of Flooding form Surface Water map	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.
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 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 STRATEGY FOR FLOOD RISK MANAGEMENT?

Flooding from surface water, groundwater and ordinary watercourses is known as "local" flooding. This includes sources of flooding such as runoff from land, raised water levels in the ground together with flooding from smaller rivers, streams and ditches.

To manage the risk from these three sources of flooding the Government has created Lead Local Flood Authorities (LLFA), which are usually Unitary Authorities or County Councils.

The area between Birmingham and Wolverhampton is known as the Black Country. In planning and local authority terms it includes Dudley Metropolitan Borough Council (MBC), Sandwell Metropolitan Borough Council (MBC), Walsall Metropolitan Borough Council (MBC) and Wolverhampton City Council (CC).

The Local Strategy for Flood Risk Management provides an overview and assessment of local flood risk in the Black Country, setting out objectives and measures for how the LLFAs will manage and reduce local flood risk. It is the document that sets out how flood risk associated with surface water, groundwater and ordinary watercourses in an area will be managed by the relevant Councils and their partners.

It is a statutory duty of the local authorities within the Black Country to produce and maintain a Local Strategy for Flood Risk Management.

A Strategic Environmental Assessment has also been produced 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.

#### WHAT IS THE VISION FOR FLOOD RISK?

The vision is that "flood risk will be managed so as to reduce the risk to all across the Black Country". The vision will be undertaken following a clear and transparent approach ensuring that the priority is centred upon the areas of highest risk, historical frequency and resulting in the greatest benefits.

The Local Strategy also complies with and complements a number of other planning policies, legislative requirements and flood risk strategies. These include the National Planning Policy Framework, the Flood and Water Management Act 2010, the Black County Core Strategy, the Black Country Strategic Flood Risk Assessment and the Preliminary Flood Risk Assessments for each local authority.

### WHO IS INVOLVED?

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

Dudley MBC has created a Strategic and Operational Board to provide a discussion forum for managing local flood risk. In addition to Council Officers the board for this discussion forum includes, the Environment Agency and Severn Trent Water, the Canals and River Trust, Natural England, English Heritage and Local Flood Groups, and it is chaired by an Elected Member.

Sandwell MBC has also created a Strategic Board to provide a discussion forum for managing local flood risk. In addition to Council Officers the board for this discussion forum includes, the Environment Agency and Severn Trent Water, and it is chaired by the Director of Service.

### IS THE BLACK COUNTRY AT A HIGH RISK OF FLOODING?

A number of historical flood events have occurred across the Black Country. These events tend to be a result of combinations of surface water runoff, inadequate drainage infrastructure, maintenance or debris issues, and interactions between different sources of flooding in the urban environment.

#### **DUDLEY**

A number of historical flood events have occurred in the Dudley area. Flooding in the borough tends to be (like with the other Black Country authorities) a result of combinations of surface water runoff, blockage of drainage infrastructure, maintenance or debris issues, and interactions between different sources of flooding in the urban environment.

Large flood events in 2007 and 2008 caused on average £50,000 of damage to properties that were internally flooded. The flooding of these properties often led to people being out of their homes for between three and six months.

Previously, locally agreed surface water information was decided upon, based upon the Environment Agency's Flood Map for Surface Water 1 in 200 year predicted event. However, this mapping has now been superseded by the Risk of Flooding from Surface Water mapping map and no property counts have been undertaken at the time of reporting. Around 11,500 properties (or equivalent to 27,000 people) are predicted to have an annual 1 in 200 chance of flooding to a depth of greater than 300 mm using the older maps. Flood risk from ordinary watercourses and groundwater is less well understood, with historical flooding the key source of information.

#### **SANDWELL**

Large flood events in 2007 and 2008 caused damage to properties that were internally flooded. The flooding of these properties often led to people being out of their homes for up to 3 months.

Currently, around 11,500 properties are predicted to have an annual 1 in 200 chance of surface water flooding to a depth of greater than 300 mm (i.e. on average, these properties have a 0.5% chance of surface water flooding each year). Flood risk from ordinary watercourses and groundwater has been studied as part of the Surface Water Management Plan which has been informed by the historical flooding records.

### **WALSALL**

Historically Walsall has not suffered from significant flooding events. The Walsall PFRA identified Darlaston Road including Station Street and Kendricks Road as an area that has suffered repeated flooding from surface water. The flood events at this location in 2009 and 2010 were deemed to have had significant harmful consequences on heath and economic activity. The PFRA does not identify any other significant flood events from local flood risk sources in Walsall.

### **WOLVERHAMPTON**

Historically, Wolverhampton has not suffered from major flooding. Although much of the country was affected during the summer floods of 2007, Wolverhampton was not substantially affected due to its history of drainage infrastructure development, the topography of the land and its location upstream of the country's primary river basins.

The flood event on the Pendeford Brook, an ordinary watercourse, in 1998 is the largest on record and affected approximately 40-50 residential properties. Localised surface water and sewer flooding was widely reported following heavy rainfall in June 2012 and September 2012.

### WHAT ARE THE OBJECTIVES OF THE LOCAL STRATEGY?

The following objectives have been developed for the Local Strategy:

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

The most important part of the Local Strategy is the Action Plan, which demonstrates what has been completed/is on-going by the Black Country authorities and other partners, and explains what future works are hoped to be carried out. This allows for transparency and accountability between partners and for the general public.

Funding sources at national, regional and local scales have been identified in the Local Strategy, which have already been made use of to undertake and support certain flood risk management activities and schemes.

### **HOW DOES THIS IMPACT ME?**

The Local Strategy enables citizens of the Black Country to understand how the local authorities and their partners expect to manage and reduce flood risk from surface water, groundwater and ordinary watercourses.

In addition the Local Strategy should encourage individuals to:

- Sign up to Environment Agency flood warning services where available and appropriate.
- Take proportionate and appropriate steps to make their properties more resilient to flooding.
- Consider whether they are able to help any existing Local Flood Forums or setup their own

Furthermore, 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 in developments.