

# **Bristol City Council: Draft Flood Risk Management Strategy**

Strategic Environmental Assessment: **Non-Technical Summary (March 2014)**



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# 1. Introduction

## 1.2 Local Flood Risk Management Strategy

1.2.1 This SEA scoping report has been prepared for Bristol City Council's Local Flood Risk Management Strategy. Legislation passed in 2010, 'Flood and Water Management Act', gave new responsibilities to Bristol City Council who became the Lead Local Flood Authority (LLFA) for Bristol. The City Council now has responsibility for managing and co-ordinating flood risk in partnership with other organisations involved in flood risk management activities. The authority is directly responsible for managing the risk of flooding from local sources – that is surface water, groundwater and ordinary (smaller) watercourses.

1.2.2 An important duty under the Act is to produce and maintain a Local Flood Risk Management Strategy which sets out our vision for managing the risk of flooding from local sources. The Local Flood Risk Management Strategy (LFRMS) forms the councils strategy and has been produced in partnership with officers across Bristol City Council, the Environment Agency, Wessex Water and the Lower Severn Internal Drainage Board. The strategy is aligned with and based on the guiding principles of the Environment Agency's national strategy. Together, the two documents form a comprehensive approach to managing flood risk from all sources in Bristol.

1.2.3 The purpose of the LFRMS strategy is to:

- Explain the role of organisations involved in flood risk management
- Provide an overview of flood risk in Bristol
- Set out the objectives for managing local flood risk
- Put in place measures to achieve the objectives
- Produce an action plan that explains how and when the measures are to be implemented
- Examine the costs and benefits of delivering the measures
- Demonstrate how the strategy contributes to the achievement of wider environmental objectives

### 1.3 Strategic Environmental Assessment

- 1.3.1 A Strategic Environmental Assessment must meet the requirements of the European Directive 2001/42/EC on the ‘assessment of the effects of certain plans and programmes on the environment’. This is commonly referred to as the Strategic Environmental Assessment or ‘SEA’ Directive.
- 1.3.2 The SEA Directive focuses on environmental issues. It is signposted throughout this report how the Strategic Environmental Assessment has met, and will meet, the requirements of the SEA Directive.

#### 1.3.3 Table 1 – SEA Directive Requirements

Article	The SEA Directive’s Requirements	Where covered in the SA Report
5(1) (a)	An outline of the contents, main objectives of the plan or programme	SA Report Section 2
	and relationship with other relevant plans and programmes;	Section 3 & Appendix A of Main SEA Report
5(1) (b)	The relevant aspects of the current state of the environment	Appendix A, of Main SEA Report
		Appendix D of Main SEA Report

Article	The SEA Directive's Requirements	Where covered in the SA Report
	and the likely evolution thereof without the implementation of the plan or programme;	Appendix A, of Main SEA Report Appendix C. of Main SEA Report Appendix D; of Main SEA Report
5(1) (c)	The environmental characteristics of areas likely to be significantly affected;	Appendix C and D, and section 3.
5(1) (d)	Existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;	Appendix A, of Main SEA Report Appendix D, of Main SEA Report Section 3 of Main SEA Report
5(1) (e)	The environmental protection objectives, established at international, community or member state level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;	Appendix A
5(1) (f)	The likely significant effects on the environment including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the	SA Report section 4, to Section 5 Appendix C.

Article	The SEA Directive's Requirements	Where covered in the SA Report
	interrelationship between the above factors.	
5(1) (g)	The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	No significant adverse effects identified
5(1) (h)	An outline of the reasons for selecting alternatives dealt with,	No alternatives presented.
	and a description of how the assessment was undertaken including any difficulties encountered in compiling the required information;	SEA Report section 2 and 3
(1) (i)	A description of the measures envisaged concerning monitoring;	Appendix C of main SEA Report
(1) (j)	A non-technical summary of the information provided under the above headings;	This document

## 2 SEA Methodology

### 2.1 Stages in the SEA Process

2.1.1 Table 2 sets out the main stages and how they have been complied with in the assessment process. The assessment has been carried out in-house by the Strategic Policy team.. Undertaking the process in-house helped to ensure that the key findings of the assessment were taken into account in the preparation of the emerging Local Flood Risk Management Strategy.

Table 2 – Strategic Environmental Assessment Stages

Strategic Environmental Assessment Stage		Work undertaken
Stage A	Setting the Baseline, Key Issues, Objectives and scope	Local Flood Risk Management Strategy Scoping Paper March 2014
Stage B	Developing and Refining Options and Assessing Effects	Draft SEA Report March 2014
Stage C	Preparing the Strategic Environmental Assessment Report	Final assessment and evaluation of residual effect March 2014
Stage D	Reporting and Consultation	March 2014 – June 2014
Stage E	Monitoring	This SEA Report – March 2014

## 2.2 Stage A of the SA process - Identify other relevant plans, policies and programmes and sustainability objectives.

2.2.1 A desk-based study was undertaken to review a wide range of plan, policies and programmes occurring at the international, national, regional and local level. Initially this was carried out as part of the evidence gathering stage in the preparation of the Local Flood Risk Management Strategy, and reported in the Scoping Report March 2014. Important aspects of those other plans and policies to take into account in the preparation of the sustainability objectives and issues facing the document. A summary of these can be found in **Appendix A** of the main SEA Report

## 2.3 Stage B – Developing and refining options and assessing effects

2.3.1 Scoring used to make assessment of effects during the Strategic Environmental Assessment was as follows:

Symbol	Meaning
Significant positive (+ +) or positive ( )	Positive effect – approach would help in achieving the objective.
Significant negative (- -) or negative ( )	Negative effect – approach would be in conflict with the objective.
	Effect depends on either final implementation (e.g. location or details of flood risk schemes), or uncertain effects (eg. depends on future spending, political decision) to make assessment. Potential exists for negative or positive effect
	Not considered to directly effect

- 2.3.2 The identification and assessment of effects was carried out by officer working groups within the policy team. When undertaking the assessment of effects 'Effect Criteria', relating to each sustainability objective were utilized The Significant Effect Criteria are available to view as Appendix B of the main SEA report.

## **2.4 Draft Strategy Assessments**

- 2.4.1 An assessment of the draft measures for each objective within the strategy was undertaken by planning policy officers in March 2014. The full assessment findings are available to view in full in section 4 and the cumulative effects set out in section 5.

The work carried out at Stage B meets Annex I (a-j) of the SEA Directive.

## **2.5 Stage C – Preparing the Strategic Environmental Assessment Report**

- 2.5.1 Initial baseline data, sustainability objectives, plans, programmes and strategies was contained in the Scoping Report March 2014. This information informed subsequent assessment of options and later stages of the Local Flood Risk Management Strategy.
- 2.5.2 This Strategic Environmental Assessment Report provides information on the assessment process undertaken on the Local Flood Risk Management Strategy. It recorded and reported the assessment of the measures in section 4 of the main SEA Report. The assessment also includes an overall evaluation assessment, available to view in section 4 and 5 of this non-technical summary.

## **2.6 Stage D – Consulting on draft Strategic Environmental Assessment Report**

The work carried at Stage B and this Report meet Article 5 and Annex I(a-j) of the SEA Directive.

- 2.6.1 This Strategic Environmental Assessment report, accompanies the draft the Local Flood Risk Management Strategy document, and is available for a 12 week consultation period starting on March 17th 2014.
- 2.6.2 Any changes required following consultation on this Strategic Environmental Assessment Report and any assessment undertaken due to changes in measures within the strategy will reporting in a revised Strategic Environmental Assessment Report.

**This stage will meet Articles 6(2), 8 and 9(1) of the SEA Directive**

## **2.7 Stage E – Monitoring the significant effects of the implementing the Strategy**

2.7.1 The SEA framework (Appendix C of the main report) contains a number of indicators and baseline data that can be used in monitoring the residual and significant effects of the Local Flood Risk Management Strategy.

**This will meet Article 10.1 and Annex I(i) of the SEA Directive.**

## **2.8 Assumptions and Limitations**

- 2.8.1 Due to the iterative nature of Strategic Environmental Assessment, whereby the Strategic Environmental Assessments inform the preparation of each progressive stage of the Local Flood Risk Management Strategy Document, the assessments must be carried out on drafts of the document as it is developing. Further changes or significant alterations to the document between Publication will be subject to Strategic Environmental Assessment if appropriate to ensure sustainability effects are fully understood.
- 2.8.2 All flood risk information is based on modeling and subject to assumptions and a degree of accuracy, especially in predicting future trends under climate change scenarios. The assessment findings therefore highlight potential to vulnerability to flood risk and it is acknowledged new data and findings might change the significance and potential effect of flood risk.

## 3 Strategic Environmental Assessment Context

### 3.1 Introduction

3.1.1 Setting the context for the assessment is an essential part of the process and involves significant data gathering and analysis of information, which is explained in Section 2.2 of the main SEA report. This section provides a summary of that context, with much of the detailed information contained in Appendices where appropriate.

Links with Other Plans, Programmes and Strategies

3.1.2 The Local Flood Risk Management Strategy document is one of a number of strategies prepared to guide the future of Bristol. There are a significant number of other plans, programmes and strategies which can be taken into account in the preparation of a planning document and associated Strategic Environmental Assessment. An assessment of the implications of the plans, programmes and strategies of relevance to the SEA process and Local Flood Risk Management Strategy and is provided in Appendix A.

### 3.2 Baseline Information

3.2.1 Information on the current environmental, social and economic state of Bristol, referred to as baseline information, provided the basis for assessment effects in the Core Strategy, which initially helped to identify sustainability problems and alternative ways of dealing with them.

3.2.2 Due to the nature of assessment at baseline data was collected and utilised for the assessment in mapped Geographical Information System (GIS) form. Key baseline data relevant to the assessment for which mapped information was collected includes:

- Access to Open Space
- Cycling and walking access and public transport
- Local Ecology assets
- Green Infrastructure Assets
- Heritage Assets
- Flood risk

3.2.3 This information also provides a benchmark against which future change can be measured. The mapped baseline data can be linked to individual sustainability objectives, in the Strategic Environmental Assessment framework and utilised to when making an assessment of effects during the assessment process. The baseline information is available to view in Appendix D of the Main SEA Report. Baseline information and associated indicators used in the assessment is available to view within the Strategic Environmental Assessment Framework, Appendix C, again of the main SEA report.

### **3.3 Key Sustainability Issues**

3.3.1 Analysis of previous sustainability appraisal findings which required further assessment, the baseline and the social, environmental and economic characteristics and additional plans and programmes reviewed have led to the identification of the key sustainability issues listed in Table 3 below.

Table 2 - Key Sustainability Issues

KEY ISSUE	SUSTAINABILITY PROBLEM
<b>ENSURING ADEQUATE ACCESS TO VARIETY OF OPEN SPACES</b>	Open space and sustainable travel routes are an important component of healthy living in Bristol, protecting the assets and access to them needs to be balanced against the need for managing flood risk.
<b>PROTECT AND ENHANCE KEY INFRASTRUCTURE</b>	Hospitals and health care facilities, major transport infrastructure, schools need to be safeguarded from flooding
<b>PROTECT AND ENHANCE LOCAL ECOLOGY</b>	Flooding or flood management techniques may lead to the loss of sites and connectivity of wildlife corridors, especially on watercourses and rivers.
<b>MAXIMISE ACCESS TO GREEN INFRASTRUCTURE AND ENHANCE CONNECTIVITY OF EXISTING ASSETS</b>	Flooding or flood management techniques may impact upon existing green infrastructure
<b>HIGH NUMBER OF DESIGNATED AND UNDESIGNATED HISTORIC ASSETS ACROSS BRISTOL</b>	Flooding or flood management techniques may impact upon key townscape assets, and or the numerous cultural and heritage assets within the city.
<b>SURFACE WATER</b>	Surface water flooding is identified as a threat to a large number of properties, infrastructure and an acute flooding issue within the city.
<b>GROUND WATER</b>	The extent of risk from ground water flooding is relatively unknown, although certain areas of the city are considered to be at risk.
<b>WATER COURSES</b>	Bristol contains many watercourses (smaller rivers) which do not have the same overflow and mitigation measures in place as the major rivers. Heavy rainfall in particular can cause flooding in and around these water courses.
<b>FLUVIAL AND TIDAL</b>	Although, the LFMS and city council are not responsible directly for these flood risk areas, areas of the city especially city centre and Avonmouth are at risk from these flood risk issues.

### 3.4 Sustainability Objectives

- 3.4.1 The objectives used in the Strategic Environmental Assessment of the Core Strategy and Site Allocations and Development Management Policies Document, were used as a starting point in the preparation of the Strategic Environmental Assessment objectives used for the Local Flood Risk Management Strategy. Analysis of section 6 'Evaluation Section', in the Core Strategy Strategic Environmental Assessment (2009), created an understanding of the issues and objectives which required further consideration and assessment at a more detailed site and area level. Often the sustainability issues requiring further consideration arose due to the nature of effect being dependent on the location of sites eg. Flood risk, ecology, heritage and historic assets.
- 3.4.2 The Strategic Environmental Assessments objectives and associated data, used in the assessment of the Local Flood Risk Management Strategy Publication document, are available to view in the 'SEA Framework' Appendix C of the main SEA report.
- 3.4.3 To ensure that the requirements of the SEA Directive are met, a cross-check was undertaken between the Strategic Environmental Assessment objectives and the impacts listed in Annex I (f) of the SEA Directive. The SEA Directive requires the Strategic Environmental Assessment to cover, "the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors." Table 3 demonstrates how the sustainability objectives cover the required SEA topics.

Table 3 - Sustainability Objectives, links with Key Sustainability Issues and the SEA Directive

Sustainability objectives	SEA requirements
Protect and Enhance Open Spaces and Rights of Way	Air, Soil, Human health, Population
Minimise adverse effects on Key Infrastructure	Population, Human health, material assets,
Protect and Enhance Local Ecology  Protect and Enhance Green Infrastructure	Biodiversity, Fauna, Flora, Air ,Climatic factors, Landscape
Protect and Enhance Cultural and Heritage Assets	Human health, Material assets, Population, Cultural Heritage
Reduce vulnerability to flooding from Water Courses	Water , Population, Human health
Reduce vulnerability to flooding from Surface water.	Population, Human health, Water
Reduce vulnerability to flooding from Ground water	Population, Human health, Water
Reduce vulnerability to flooding from Tidal/Fluvial	Population, Human health, Water

#### 4 STRATEGY MEASURES: CUMULATIVE EFFECTS

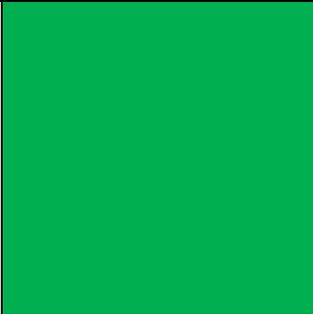
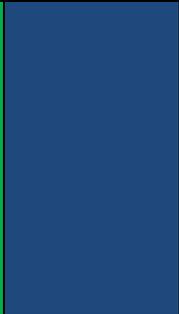
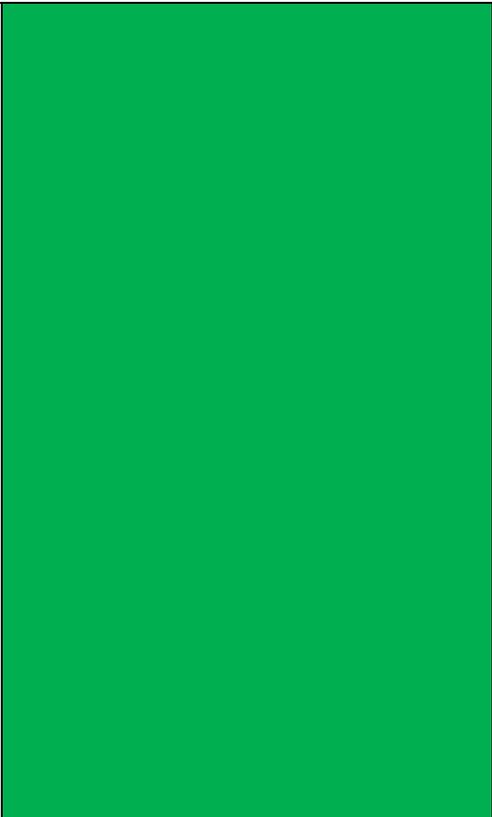
Sustainability Objectives	1A	2A	3A	4A	5A	2A	2B	2C	2D	3A	3B	3C	3D	4A	4B	4C	4D	4E	4F	5A	5B	5C	5D
Protect and Enhance Open Spaces and Rights of Way									Green	Dark Blue													
Minimise adverse effects on Key Infrastructure	Green				Green	Dark Blue	Green							Green		Green						Green	
Protect and Enhance Local Ecology	Dark Blue							Dark Blue	Green	Dark Blue					Green		Green						
Protect and Enhance Green Infrastructure	Dark Blue							Dark Blue	Green	Dark Blue					Green		Green						
Protect and Enhance Cultural and Heritage Assets								Dark Blue															
Reduce vulnerability to flooding from Water Courses	Green	Green	Dark Blue		Green	Dark Blue	Green		Green	Dark Blue				Green					Green	Dark Blue			
Reduce vulnerability to flooding from Surface water.	++	Green	Dark Blue		Green	Dark Blue	Green		Green	Dark Blue				Green	Green				Green	Dark Blue			
Reduce vulnerability to flooding from Ground Water		Green	Dark Blue											Dark Blue					Green	Dark Blue			
Reduce vulnerability to Fluvial and Tidal Floodrisk	++	Green	Dark Blue		Green	Dark Blue								Green				Green	Dark Blue				

## 5 EVALUATION OF EFFECTS

5.1.1 This evaluation considers the cumulative effects highlighted in section 5, concluding the overall effect on the environmental sustainability objectives from the measures in the LFMS.

Objective	Nature of Cumulative Effect	Comment
Minimise adverse effects on Key Infrastructure	++	Overall significant positive effect on this objective, a variety of measures from limiting the risk, which will increase understanding of flood risk in areas where key assets exist
Protect and Enhance Local Ecology & Protect and Enhance Green Infrastructure		<p>The approach to requiring sustainable urban drainage techniques and sustainable flood measures in the design of developments creates potential positive effects on local ecology and green infrastructure.</p> <p>However, the effect of individual flood risk alleviation schemes across Bristol, referred to in Understanding the Risk measures have uncertain effects on local ecology and green infrastructure. Potential exists for both negative and positive effects depending on the design</p>

			and location of future flood risk schemes.
Reduce vulnerability to flooding from Water Courses			<p>Generally the measures in the strategy have positive effects.</p> <p>Comparative to two other sources of flooding there is just one specific scheme proposed in the future at Ashton. However, sustainable design and SUDS scheme assisting in reducing the rate of run off to water courses and improved maintenance of assets involved in the control of flooding related to water courses should also assist in bringing about positive effects on reducing vulnerability from water course flooding.</p>
Reduce vulnerability to flooding from Surface water.		++	<p>There are more measures with positive effect on surface water, than any other environmental objective.</p> <p>Comparative to other local flood risk responsibilities, the largest number future schemes are proposed to address surface water flood risk.</p> <p>Sustainable design and SUDS scheme assisting in reducing the rate of run off, contributes to individual projects proposed to address flooding from this source.</p> <p>Overall the measures within the strategy are considered to assist in bringing about significant positive effects on reducing vulnerability to flooding from surface water.</p>
Reduce vulnerability to flooding			Uncertain as to the overall risk within the city from

<p>from Ground Water</p>			<p>ground water flooding, making it problematic for the measures in the strategy to respond.</p> <p>Where risk has been identified, measure 1a, proposes future research and scheme to address the risk in the longer term. Overall therefore effects are positive but largely uncertain due to lack of clarity and knowledge as to the overall risk from this source of flooding.</p>
<hr/>			
<p>Reduce vulnerability to Fluvial and Tidal Flood risk</p>		<p>The council nor the LFMS are the primary authority responsible for managing flood risk from fluvial and tidal events. Whilst not the direct emphasis of this strategy some of the measures are designed to assist combating flood risk from these fluvial and tidal flooding, befitting the overall risk to the city they pose.</p> <p>There is a strong emphasis on assisting the primary agencies, through undertaking research and implementing management measures outlined in measures 1a, which place a high priority on addressing fluvial and tidal flooding in the city centre and at Avonmouth. Other measures make a commitment to partnership working and direct alignment with planning policies and controls, to assist in reducing flood risk posed by these sources through controlling inappropriate development.</p> <p>Therefore the strategy is considered to have a positive effect on reducing vulnerability from these sources.</p>	

