Bath and North East Somerset's Local Flood Risk Management Strategy

Strategic Environmental Assessment: Environmental Report

Non-Technical Summary

August 2015

Bath & North East Somerset Council

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1. Introduction

Flooding is a natural process that can have a major effect on lives, communities, the economy and the environment. As a Lead Local Flood Authority, Bath & North East Somerset Council is responsible for the development, application and monitoring of a Local Flood Risk Management Strategy to address potential flood risk from all local sources, including surface water run-off, groundwater and ordinary watercourses. Flood risk from main river sources, such as the River Avon, is managed by the Environment Agency. The Local Flood Risk Management Strategy is consistent with the plans and programmes which the Environmental Agency has set for flood risk management in Bath & North East Somerset.

The purpose of Bath & North East Somerset's Local Flood Risk Management Strategy is:

- to ensure that local flood risk is managed through a coordinated approach, and;
- that communities, businesses and individuals are more aware of the risks of flooding, understand who is responsible for dealing with flooding, and are clear about the actions they can take to manage the risk of flooding.

The Local Flood Risk Management Strategy aims to manage local flood risk through a coordinated approach

The Study Area

The Study Area includes the entire area within the Bath & North East Somerset district (see Figure 1). This covers a total area of 352km^2 of which two-thirds is classed as green belt. The district stretches from the outskirts of Bristol, south into the Mendip Hills and east to the southern Cotswold Hills and Wiltshire border. The city of Bath is the main settlement in the district which also includes the urban areas of Keynsham, Midsomer Norton, Radstock and Westfield, as well as principal villages such as Peasedown, St. John and Paulton. Bath & North East Somerset has a varied geography including river valleys and rolling hills. Within the district the Chew Valley where Chew Valley Lake is a significant drinking water lake and important area for wildlife and recreation. The Study Area has a long history of human habitation, most significantly during Roman times.

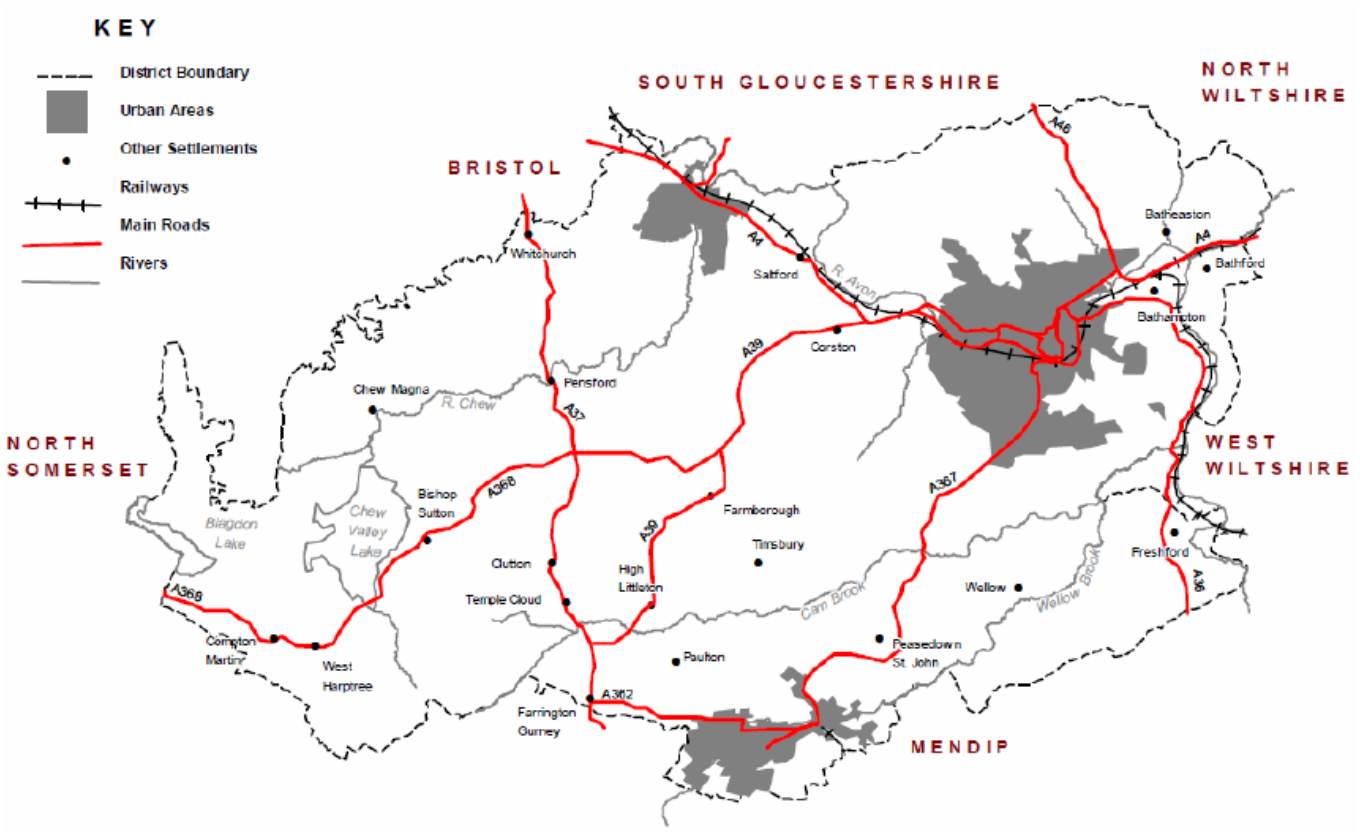

Figure 1: The Local Flood Risk Management Strategy covers the entire Bath & North East Somerset district

Strategic Environmental Assessment

A Strategic Environmental Assessment has been carried out to support the Bath & North East Somerset Local Flood Risk Management Strategy. This document provides a summary of the Draft Environmental Report which has been produced to document the Strategic Environmental Assessment process undertaken.

Strategic Environmental Assessment is a systematic process which assesses the potential environmental effects of plans and strategies before they are approved. The process allows us to consider different ways of managing flood risk, and identify, minimise or avoid significant environmental impacts at the earliest opportunity.

The Strategic Environmental Assessment has been undertaken in accordance with the European Strategic Environmental Assessment Directive as transposed into UK law by the Environmental Assessment of Plans and Programmes Regulations ('the Strategic Environmental Assessment Regulations'). In line with the Local Government Association Framework guidance, a proportionate Strategic Environmental Assessment of the Local Flood Risk Management Strategy has been undertaken which takes into consideration the high level nature, and limited structural elements, of the proposals, whilst noting the key environmental sensitivities of the district.

2. Key Issues and Constraints

We have collected a wide range of baseline data from a variety of sources and reviewed a range of national and local plans, policies, programmes and environmental protection legislation which are relevant to future flood risk management planning of the Study Area. We have been consulting with external organisations, local experts and the public throughout the development of the Strategy to ensure we fully understand flood risks and existing environmental conditions.

The table below outlines the key environmental issues that have been identified.

Environmental Receptor	Key Environmental Issues
Water	• Compliance of the Local Flood Risk Management Strategy with the environmental objectives of the Water Framework Directive (WFD) and implementation of the Severn River Basin Management Plan (RBMP) • Movement of pollutants • Water resource management • Localised effects on surface and ground water.
Flooding	• Changes in flood risk to urban and rural communities
Population and Human Health	• Potential for stress, ill health or injury from flooding and flood risk • Increasing costs associated with flooding and flood risk
Biodiversity and Landscape	• Landscape character of Bath & North East Somerset, including areas of high landscape quality in rural and urban settings, green belt, the Bath World Heritage Site and Cotswolds and Mendip Hills Areas of Outstanding Natural Beauty • Presence of priority habitats and species • Statutory and non-statutory conservation sites including the Bath and Bradford-on-Avon Special Area of Conservation (SAC), North Somerset and Mendip Bats (SAC), Chew Valley Lake Special Protection Area (SPA), 22 Sites of Special Scientific Interest and seven Local Nature Reserves and Ancient Woodlands.
Cultural Heritage	• Bath UNESCO World Heritage Site - considered of Outstanding Universal Value due to the city's hot springs, Roman archaeology, Georgian town planning and architecture and green setting of the city within a landscape bowl. • 57 Scheduled Monuments, 36 Conservation Areas, 3,278 Listed Buildings, 16 Registered Parks and Gardens and a Historic Battlefield.
Climatic Factors	• Climate change is likely to result in an increase in more extreme weather events flooding in the UK and may result in water scarcity during summer time.

Environmental Receptor	Key Environmental Issues
Material Assets	• Mineral resources and abstraction including limestone and coal. • Soil resources include clayey soils with high organic content, inherently at risk of agricultural run-off. • Waste management, including waste transfer stations and recycling facilities. • Transport infrastructure, including road and rail network • Current shortage of housing to be met by construction of new dwellings by 2026. • Local employment
The following environmental receptor has been 'scoped out' of the assessment	
Air Quality	It is unlikely that any significant impacts on air quality will occur. Emissions associated with construction activities can lead to localised and temporary effects on air quality; however, as details such as construction methods are unknown at this stage these effects are better assessed and managed at project level.

Strategic Environmental Assessment Objectives

Based upon the above consideration of key environmental topics, ten Strategic Environmental Assessment objectives have been formed in relation to the Bath & North East Somerset Local Flood Risk Management Strategy. These include:

1. Protect and enhance the ecological and chemical status of watercourses	**2. Understand and manage flood risk**
3. Maintain and enhance positive health profile for Bath & North East Somerset Council	**4. Protect and enhance biodiversity and geodiversity**
5. Maintain and enhance characteristic landscape features	**6. Protect and enhance features that define the cultural heritage of Bath & North East Somerset Council**
7. Manage, plan and adapt to the impacts of climate change	**8. Ensure new development in Bath & North East Somerset Council is located in respect to the sequential test**
9. Maintain and enhance accessibility to essential services by providing efficient transport infrastructure	**10. Protect and enhance high quality agricultural land**

3. Local Flood Risk Management Strategy Objectives and Action Plan

The objectives of the Local Flood Risk Management Strategy are to:

1. improve understanding of local flood risk;
2. promote community awareness and build capability for appropriate action;
3. manage local flood risk through capital and maintenance investment;
4. prevent inappropriate development that creates or increases flood risk, and;
5. improve flood preparedness, warning and ability to recover.

Action plans have been developed to ensure that the Local Flood Risk Management Strategy succeeds in achieving these objectives over a ten year period from 2015 to 2025. These actions identify tasks, timescales and resources that are required to achieve their aim and are provided in the Local Flood Risk Management Strategy Draft Report. The action plan is a live document which will be regularly reviewed and updated and includes actions to improve flood reporting, inform the population about flood risk and how it can be managed, monitor local flood risk and plan for action.

Bath is a UNESCO World Heritage Site famous for its Roman history and Georgian architecture

4. Environmental Effects, Mitigation and Monitoring

The draft Local Flood Risk Management Strategy has the potential for numerous environmental effects, both positive and negative. These, and any proposed mitigation or further work required, are summarised below. Wherever there is potential for the Strategy to cause significant negative environmental effects, further assessment will be undertaken at the more detailed project level to fully assess and minimise these.

	Positive Effects	Negative Effects	Further Work and Mitigation
WATER	Implementation of flood risk management and Sustainable Drainage Systems (SuDS) could contribute to the achievement of WFD water quality targets due to a reduction in the mobilisation of pollutants and reduced flood risk of contaminated land, sewerage networks and agricultural land.	Possibly of small scale modifications to, or pollution of, WFD waterbodies, but these effects are unlikely to contribute to failures in regional quality targets. Structural engineering actions resulting from the Strategy could have localised effects on surface and ground water quality or the physical nature of water bodies, which could result in indirect effects on the ecology and geomorphology of water bodies.	- All work will ensure compliance with the WFD - Structural works will follow Environment Agency's Pollution Prevention Guidelines - Where necessary, relevant flood defence or land drainage consents will be obtained - There will be good communication, collaboration of efforts and information sharing between partners within and outside of Bath & North East Somerset Council.
FLOODING	Increased understanding of flood risk, and reduced flood risk to homes, businesses and critical services, as well as reduced flooding of contaminated sites and roads which would otherwise result in pollution events.	Engineering schemes within the floodplain could affect floodplain storage capacity and flood water movement.	- Implement flood risk assessments -Under common law, landowners are responsible for drainage of their own land. It is therefore uncertain if they will take measures to control runoff rates. Monitoring of practices may be required. s
HUMAN POPULATION	Reduction in stress, ill-health and injuries caused by flooding or flood risk. Reduced damage to property, amenities and infrastructure. Improved management of sewer flooding preventing the risk of untreated water entering homes.	No negative impacts are envisaged.	No mitigation is required as all effects are considered positive.

	Positive Effects	Negative Effects	Further Work and Mitigation
CULTURAL HERITAGE	Heritage assets and sites will benefit from increased flood protection.	Low potential for direct damage to heritage assets and sites from construction works. Setting of a landscape bowl in Bath could be affected by tree removal.	- Consult with Bath & North East Somerset Council planning department and obtain planning and listed building consents, if required.
BIODIVERSITY AND LANDSCAPE	Long term flood alleviation measures (e.g. SuDS) will provide opportunities to develop new habitats and enhance biodiversity. Statutory conservation sites that are at risk of local flooding will benefit (e.g. Chew Valley SPA, Bath and Bradford on Avon Bats SAC and North Somerset and Mendip Bats SAC as well as many SSSIs). Reduction in pollution entering watercourses through runoff or other sources.	Low potential for structural engineering schemes to have minor effects on species and habitats.	- Where necessary, flood defence and land drainage consents will be sought prior to any construction. - Detailed mitigation will be developed as required following project level Environmental Impact Assessment, if required. - Consultation with statutory consultees.
CLIMATIC FACTORS	Unlikely to be any significant effects.	Unlikely to be any significant effects.	The Local Flood Risk Management Strategy includes actions to ensure that development takes in to account the potential risk of changes in climatic factors.
MATERIAL ASSETS	Improved flood risk management in areas allocated for development in the Bath & North East Somerset Council Core Strategy. Increased confidence in the local economy for new investments and expansion. Improved flood risk management will allow for continued extraction of minerals at Limpley Stoke and allow Bath, Midsomer Norton and Keynsham waste management sites to continue operating.	Unlikely to be any significant effects.	No mitigation required as all effects are considered positive.

Cumulative Effects and Wider Benefits

Cumulative positive effects upon flood risk management are anticipated as this Strategy is being developed alongside similar planning initiatives to manage and alleviate flood risk (for example Multi-agency flood plans and Catchment Flood Management Plans). In addition, good communication, collaboration of efforts and information sharing between partners within and outside Bath & North East Somerset will lead to cumulative positive effects upon water quality and resources for the entire Bristol Avon.

Measures that incorporate natural processes into flood risk management such as Sustainable Drainage Systems (SuDS) will be promoted through the implementation of the Local Flood Risk Management Strategy. The use of SUDs within any engineering scheme proposed could lead to biodiversity enhancements such as the creation of wetland areas. In addition, promotion of SuDS into new and existing developments would offer further opportunities to enhance biodiversity and water quality while managing flood risk, creating a more sustainable area.

Monitoring

A key stage in the production of a Strategic Environmental Assessment is the development of measures that can be used to monitor the environmental effects of the implementation of the strategy. The findings of the monitoring will be reviewed and incorporated into the periodic review of the Local Flood Risk Management Strategy and be used to prepare an appropriate response where adverse effects are identified. The following indicators will be used to monitor and measure the magnitude of environmental effects during the implementation of the Strategy:

Changes in ecological and chemical status of water bodies	**Changes in quantitative status (e.g. water levels) of watercourses and waterbodies.**	**Changes in water quality**
Changes in the number of flood events	**Changes in the number of properties at risk of flooding**	**Change in the number of critical services at risk of flooding**
Changes in the severity of flood events	**The number of SuDS that are implemented**	**The number of defences that are developed**
Change in the number of flood related injuries, illnesses and injuries	**Numbers and distribution of protected habitats and species**	**Status of designated nature conservation sites within Bath & North East Somerset**
Number of designated sites potentially at risk from future flood events	**Numbers of cultural heritage features at risk from flooding (e.g. Scheduled Monuments, Listed Buildings)**	**Future updates in flood risk based upon local flood risk changes and the latest government climate change predictions**

It is anticipated that the majority of these performance indicators can be sufficiently monitored by existing and future monitoring programmes currently being undertaken by Bath & North East Somerset Council or other organisations, such as the Environment Agency or Water Utility Companies. If other organisations identify negative effects, Bath & North East Somerset Council will be informed for example through the Local Resilience Forums or Strategic Flood Board & Operational Working Group being set up as part of the Local Flood Risk Management Strategy.

5. Compatibility testing of Objectives

An assessment has been performed to determine how compatible the ten Strategic Environmental Assessment Objectives and five Local Flood Risk Management Strategy objectives are with each other. Several of the objectives were simply not related; particularly the Strategy objectives that are linked with non-structural actions such as raising public awareness of flood risks. The majority of related objectives are compatible and will ensure maintenance and enhancement of environmental features whilst promoting structural works to manage flood risk.

Chew Valley Lake is the largest artificial lake in south-west England, and valued as an important resource for drinking water as well as for biodiversity and recreation

6. Conclusion

Through the numerous actions proposed to identify and manage flood risk, the Local Flood Risk Management Strategy will have positive effects on water quality, flood risk, human health, statutory nature conservation sites, cultural heritage, housing, economy, waste management and infrastructure. Mitigation is required to ensure that any negative effects of structural engineering works upon water resources, biodiversity and cultural heritage are minimised.

This Draft Strategic Environmental Assessment Report is subject to a two month consultation process from the 1st September 2015 until the 26th October 2015. The Council is particularly seeking comments on the assessment of the environmental effects, proposed mitigation measures; and proposed monitoring programmes.

Consultation feedback on this Strategic Environmental Assessment will be integrated into the development, finalisation and adoption of the Local Flood Risk Management Strategy.

7. Abbreviations and Glossary

Abbreviation / Term	Definition
AONB	Area of Outstanding Natural Beauty
EIA	Environmental Impact Assessment
FRMS	Flood Risk Management Strategy
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage System
WFD	Water Framework Directive
Flood Risk	The combination of the likelihood of a flood happening and the impact it would have
Flood Risk Management	Activities that are undertaken to reduce the impact of flooding
Mitigation	The measures, including any process, activity or design to avoid, reduce, remedy or compensate for negative impacts.
River Basin Management Plan	A plan prepared under the Water Framework Directive that sets out the mitigation measures and actions that are needed for water bodies to reach good ecological status
Strategic Environmental Assessment	A process carried out according to the requirements of the Strategic Environmental Assessment Directive 2001/42/EC designed to ensure that significant environmental effects arising from proposed plans and programmes are identified, assessed, subjected to public participation, taken into account by decision-makers, and monitored.
Sustainable Drainage Systems	Drainage solutions that provide an alternative to the direct channelling of surface water through networks of pipes and sewers to nearby watercourses.
Water Framework Directive (WFD)	The WFD (EC Directive (2000/60/EC)) sets out environmental objectives for water status based on ecological and chemical parameters, common monitoring and assessment strategies, arrangements for river basin administration and planning and a programme of measures in order to meet the objectives.
World Heritage Site	A natural or man-made site, area or structure recognised as being of outstanding international importance and therefore as deserving special protection. Sites are nominated to and designated by the World Heritage Convention (an organisation of UNESCO).