

Local Flood Risk Management Strategy 2015 - 2020

Summary

South Gloucestershire Council



Introduction

This document is a summary of **South Gloucestershire Council's Local Flood Risk Management Strategy ('Strategy')**, setting out our plan for the management of local flood risk during the initial period 2015 - 2020.

The Strategy is available on our website: <http://www.southglos.gov.uk/environment-and-planning/planning/development-control/local-flood-risk-management/>

Background

Much of the UK, including South Gloucestershire, is at risk of flooding from a number of sources, including surface water, groundwater, sewers, rivers and the sea and it is predicted that this risk will increase in the future, influenced by climate change.

This risk was realised in July 2007 when significant surface water flooding was experienced across parts of England and Wales, including in Somerset and Gloucestershire.

Following an independent review of the flooding event, the Government enacted the Flood and Water Management Act 2010 ('the Act') giving local authorities, as Lead Local Flood Authorities, **new powers to manage local flood risk in a more co-ordinated way.**

Within South Gloucestershire, up to 21,500 residential properties, 1,400 businesses and a number of critical services could be at risk of surface water flooding in the future

*Based on updated Flood Map for Surface Water
(Environment Agency, December 2013)*

South Gloucestershire Local Flood Risk Management Strategy

South Gloucestershire Council, as a Lead Local Flood Authority, have a legal requirement under the Act to develop, maintain, apply and monitor a **Local Flood Risk Management Strategy** that:

- Provides an overview of flood risk management work being undertaken and planned throughout South Gloucestershire,
- Explains how flood risk partners, known as Risk Management Authorities, are working together to reduce flood risk, and,
- Clearly sets out which organisations are responsible for different types of flooding in South Gloucestershire to ensure a common understanding of roles, responsibilities and priorities.

The increase in extreme weather conditions, the presence of the built environment in areas of flood risk, and limited public funding, means that it is not possible to prevent all flood incidents happening in South Gloucestershire. Through the Strategy we can coordinate our actions with others so that flood risk is reduced and the impact of any flood incidents is minimised. The Strategy also provides us with an opportunity to work together with local residents, businesses and stakeholders to minimise risk and prepare for the effects of climate change.

The Strategy has been informed by local, regional and national policy, including the Environment Agency's National Strategy for Flood and Coastal Erosion Risk Management, to ensure a coordinated approach to flood risk management within South Gloucestershire.

The draft Strategy underwent public consultation between October 2014 and January 2015.

Further information on the background and legal requirements for the Strategy is provided in **Section 1** of the Strategy



Flooding at Frampton, South Gloucestershire

Roles and Responsibilities for Flood Risk Management

As a Lead Local Flood Authority, South Gloucestershire Council's responsibilities relate to 'local' flood risk from **surface water, groundwater and small rivers, streams and ditches, known as ordinary watercourses** and coordinating flood risk management across South Gloucestershire. Other Risk Management Partners, known as Risk Management Authorities (RMAs), including the Environment Agency, Wessex Water and the Lower Severn Internal Drainage Board (IDB), have responsibilities for managing risk from **other flood sources**.

Section 2 of the Strategy outlines the roles and responsibilities of flood risk management partners in South Gloucestershire

	Flood Source	RMA	Description
Local Sources	Surface Water	South Gloucestershire Council	Can occur when heavy rainfall cannot be absorbed into the ground or enter the drainage systems.
	Ordinary Watercourses	South Gloucestershire Council & Lower Severn IDB	Smaller watercourses, such as streams, ditches, drains, cuts, dykes and sluices and rhines (IDB only). These may flood when they cannot hold the volume of water flowing through them and overflow onto surrounding land.
	Groundwater	South Gloucestershire Council	Can occur when water levels in the ground rise above surface levels, which is most likely to occur in areas underlain by permeable rocks and after long periods of rainfall.
Other Sources	Main River	Environment Agency	Can occur when a large ('main') river cannot cope with the volume of water draining into it or becomes blocked by debris and overflows its banks onto surrounding land.
	Sea (Tidal)	Environment Agency	Can occur as a result of high tides, storms, tidal surges and sea spray. High sea and estuary water levels can cause tide locking, reducing the discharge of water from rivers, rhines and sewers causing an additional source of risk.
	Sewers	Wessex Water	Can occur when surface water or combined (surface water and foul) sewers are overwhelmed by heavy rainfall, which exceeds the capacity of the sewer network, the system becomes blocked by debris or sediment, and/or the system surcharges due to high water levels in the receiving watercourse.
	Reservoir	Environment Agency	Can occur when reservoirs, which hold large volumes of water above ground, overtop or breach, resulting in a fast release of water.

Our responsibilities (South Gloucestershire Council)

As the Lead Local Flood Authority and a Risk Management Authority we have legal duties and powers to investigate significant flooding incidents, maintain a register of significant flood risk assets and manage flood risk from ordinary watercourses through engagement with landowners,

As the Highway Authority we ensure that local highways are drained of surface water and maintain highway drainage systems,

As an Emergency Responder we develop emergency plans and business continuity plans for use during an emergency, along with other organisations,

As the Local Planning Authority we incorporate flood risk management within the Local Plan, assess the flood risk for planning applications for development and undertake a Strategic Flood Risk Assessment to inform strategic land use planning,

As a Land and Asset Owner we manage and maintain flood risk assets on our land to ensure they operate as required and do not increase flood risk elsewhere, and,

As the Land Drainage Authority we have certain permissive powers to undertake flood defence works and powers of enforcement under the Land Drainage Act 1991 on watercourses which have not been designated as Main Rivers and which are not within the Lower Severn IDB area.

How are we working with others?

Flood Risk Partners

The multi-agency South Gloucestershire Council Flood Risk Management Partnership Operational Working Group has been established and includes representatives from the Environment Agency, Wessex Water and the Lower Severn IDB. The Strategy has been developed through this Partnership Group to ensure that a collaborative approach is adopted throughout South Gloucestershire.

We are also members of a number of other partnership groups across the West of England including the Severn Estuary Coastal Group, West of England Flood Risk Partnership, Wessex Regional Flood Risk Partnership and the Wessex Regional Flood and Coastal Committee and work with these groups to manage flood risk across South Gloucestershire and neighbouring areas.

Section 2 of the Strategy provides further information on our work with flood risk partners

Public, community groups, parish and town councils and businesses

The public, community groups and businesses have a key role to play in the management of flood risk. Our aim, aligned with the National Strategy, is that the public, community groups, parish and town councils, and businesses are aware of the flood risks they face and their responsibilities to manage these, take action to reduce their vulnerability to flooding, and are actively involved in flood risk management.

To achieve this vision, we will raise awareness of local flood risk and encourage local communities to take action, and, target communities at greatest risk as part of flood studies or through development of a flood alleviation scheme.

A community engagement consultation exercise was undertaken between February and March 2014 and the outcomes from this have been used to shape the Strategy and flood risk management priorities.



Flooding at Damsons Bridge, South Gloucestershire

Flood Risk in South Gloucestershire

South Gloucestershire is primarily at risk of flooding from surface water, rivers and the sea. This does not however indicate that the flood risk from other sources is insignificant. In fact, the most severe flooding is often caused when different sources of flooding combine.

Whilst developing the Strategy we have considered the impact of all sources of flooding and historic flooding across South Gloucestershire and are working with our Flood Risk Partners where there are combined sources of flood risk

Historic flooding

Compared to neighbouring authorities, South Gloucestershire has experienced few significant flooding events in recent years. Extensive rainfall was experienced most recently in the winter of 2013 / 2014 and the Council responded to a number of localised flooding incidents, the majority being related to flooding from larger rivers, known as **main rivers**.

Prior to this, significant flooding events occurred in 2011 where poor watercourse maintenance in Little Stoke caused an **ordinary watercourse**, a tributary of the Stoke Brook, to flood and in 2009 when high **surface water runoff** combined with restricted **rhine** culvert capacity and sewer flooding caused internal flooding of properties in Aust village.

Overview of Flood Risk

Flooding risks from **rivers and the sea** in South Gloucestershire are associated with the Severn Estuary, River Frome, River Avon, Henbury Trym watercourse, Ham Brook, Folly Brook and Ladden Brook are relatively well understood and have been managed for many years by the Environment Agency. These risks are mapped and are used to guide planning decisions. However flood risk from other local sources are less well understood; these are typically localised events which are often difficult to predict.

Parts of South Gloucestershire are particularly susceptible to **surface water flooding**. Recent data published by the Environment Agency shows that locations within the urban fringes of north and north east Bristol, such as Filton and Kingswood, as well as Thornbury and southern parts of Yate are predicted to be at greatest risk of surface water flooding.



Flooding at Ellacombe Road, Longwell Green, South Gloucestershire

The risk of flooding from **groundwater** is less well understood and can be difficult to predict due to the 'hidden' nature of the source of flooding and the longer period of onset, as groundwater flooding can occur several days or weeks following heavy rainfall. Whilst available data indicates that the majority of South Gloucestershire is at low risk of groundwater flooding, groundwater flood risk can be very localised and some settlements, including Cromhall, have reported historic flooding incidents.

There are a number of areas at risk of flooding from **ordinary watercourses** across South Gloucestershire. The majority of these, are **rhines (drainage channels)** located in the west of South Gloucestershire, including Pilning, Olveston, Tockington, Oldbury on Severn and Thornbury, and managed by the IDB who undertake planned maintenance of the primary rhines. Other areas at risk, outside of the IDB catchment, include North Yate and Filton.

There is not considered to be a significant risk from **sewer flooding** across South Gloucestershire. Whilst localised incidents may occur, particularly to the foul sewer flooding system due to inflow / infiltration causing overloading of pumping stations, Wessex Water has over recent years undertaken public surface water sewer improvements in Thornbury, Downend and Charfield to reduce flood risk.

However, climate change is anticipated to increase the pressure on the existing sewer system as summer rainfall events become more intense and winter rainfall more prolonged which could lead to more localised flooding incidents in the future. Coupled with this, development pressures will need to be managed to ensure that future growth in urban areas is supported by investment in sewage infrastructure to minimise sewer flooding risk.



Flooding at Charfield, South Gloucestershire on 30 October 2000

Section 3 of the Strategy provides further information on historic flooding and flood risk in South Gloucestershire

How will we deliver the Strategy?

Risk from flooding can be managed in different ways. For example, by avoiding living in areas at risk of flooding, or adapting how people live in these areas by improving flood warning and forecasting, and helping communities prepare for flooding when it happens. Building flood defence can reduce the damage to properties prone to flooding, and learning from flood events can help improve how these situations are dealt with in the future.

To manage flood risk across South Gloucestershire we are working in partnership with local communities, businesses and organisations responsible for managing flooding, in order to better understand and reduce local flood risk in South Gloucestershire where it is economically, technically and environmentally feasible to do so.



Flooding in Rockhampton, South Gloucestershire

The Strategy sets out how we will deliver the Strategy over the next six years. This initial period for the Strategy corresponds with the formal review timetables for the Flood Risk Management Plans being produced by the Environment Agency, which sets out measures to manage flood risks from **main rivers, reservoirs and the sea** within South Gloucestershire and the wider catchment.

The Strategy sets out objectives for managing local flood risk, taking account of the impacts of flooding on people, property and human health, businesses and commerce and the natural and historic environment. These are based on the National Objectives in the Environment Agency’s National Flood and Coastal Erosion Risk Management Strategy to ensure a consistency with the national approach but have been amended to be specific to South Gloucestershire.

A number of **Measures** (how we aim to achieve each objective) and **Actions** (things we will do to deliver the measures) have been identified to achieve the Strategy objectives, and these are set out in the **Action Plan** that accompanies the Strategy. These have been identified as Short- (years 1-2), Medium- (years 3-4) and Long-term (years 5-6) actions, covering the initial Strategy period. However, it should be noted that a number of these measures will run throughout the entire Strategy period, and have been prioritised into short-, medium- and long-term actions based on current available funding and resources. These will be reviewed through the Strategy lifetime.

The Strategy Action Plan is included in **Appendix B** of the Strategy. A summary of this is provided overleaf

Sections 4-10 of the Strategy set out the Strategy objectives, measures and actions proposed to manage flood risk in South Gloucestershire

In delivering flood risk management, we also have the opportunity to help deliver wider environmental objectives and requirements, as set out in European Legislation including the Water Framework Directive. A **Strategic Environmental Assessment** has been undertaken to ensure that environmental effects have been considered during the development of the Strategy.

The **Environment Report** provides details of the outcome of the Strategic Environmental Assessment

Strategy Action Plan Summary

Objective	How we will deliver the objective	Priority
1. Prioritise and implement improvements to local flood infrastructure to reduce the likelihood of flooding causing harm to the communities, businesses and the environment of South Gloucestershire	Review and formalise flood risk management processes related to asset maintenance and ensure processes are resilient to changing patterns of precipitation projected as a result of climate change	Medium
	Ensure drainage infrastructure for new development is future-proofed to accommodate levels of precipitation expected during its design life	Medium
	Use knowledge of flood risk to inform the emergency response to flooding within South Gloucestershire	Medium
	Prioritise flood protection schemes for South Gloucestershire and agree responsibilities, timescales and funding for delivery	Long
	Monitor available funding sources for flood risk management activities and investigate additional funding sources that can be accessed through delivering multiple benefits	Short
2. Increase public awareness of the level of flood risk affecting communities and businesses and how they can better protect themselves and their property	Develop communications with stakeholders, businesses, parish and town councils and communities on sources and level of flood risk in South Gloucestershire	Medium
	Raise awareness of householder, business and asset owner responsibilities and what residents, businesses and communities can do for themselves to manage their own risks	Medium
	Work with land owners to manage land drainage in South Gloucestershire	Medium
3. Actively work with other Lead Local Flood Authorities and Risk Management Authorities to coordinate management and reduce flood risk across South Gloucestershire	Identify areas within South Gloucestershire where flood risk and management responsibilities interact and overlap	Short
	Hold regular communication with neighbouring LLFAs and Risk Management Authorities to ensure full awareness of flood problems and related management	Medium
	Review emerging flood risk management studies to understand risks to / from neighbouring LLFAs and Risk Management Authorities	Short
4. Contribute to wider social, economic, environmental and cultural benefits by encouraging sustainable multi-benefit solutions and maximising use of resources	Review existing Council evidence base, policies and targets to identify opportunities for joint-working to maximise benefits and use of resources	Short
	Look to achieve multiple benefits through the use of SuDS i.e. reduce flood risk, improve water quality, improve biodiversity, and improve community open space and streetscapes	Long
5. Improve our understanding of drainage assets, flood risk and how climate change will influence future flood risk	Engage with the public about their experiences of flooding	Medium
	Use climate change projections and evidence to identify the key mechanisms, impacts and areas at risk from flooding in the future	Medium
	Record and monitor flooding incidents to identify those areas at greatest risk	Medium
	Review and maintain the South Gloucestershire Local Flood Risk evidence base	Short
6. Ensure future development considers all known flood risks and climate change projections for South Gloucestershire	Raise awareness with Members of future flood risk in South Gloucestershire and implications of planning and funding decisions	Medium
	Develop stronger links between planning policy, flood risk information and climate change projections	Medium
	Establish South Gloucestershire's requirements for SuDS in new developments in line with national legislation and guidance and appropriate local standards and procedures, which recognise known local flood risks	Short
	Improve communication with developers to clarify South Gloucestershire requirements for flood risk management and SuDS	Medium

How will flood risk management be funded?

In the current economic climate, there are significant pressures on funding sources and in the future there will be greater emphasis on us to fund activities and schemes from our own or alternative local sources of funding.

It is not possible to prevent all flooding, and with limited resources and funding it is not possible to carry out work in every area at risk of flooding. The approach to flood risk management must be proportionate and risk based and ensure that environmental and other consequences are taken into account. Schemes which deliver the highest benefit will be prioritised, seeking Government funding where they meet the funding criteria related directly to the number of households protected, damage prevented and other benefits such as the environmental or business benefits that will be delivered. Additionally, priority will also be increased if the Council contributes to risk, where acting as the landowner or highway authority.

Projects are likely to fall under three broad categories:

- Schemes with highest eligibility for national, central government, funding,
- Local priorities with lower eligibility for national funding, and,
- Ongoing programmes of management and maintenance schedules.

In the future we will need new ways of partnership working to make sure we can successfully reduce the risk of flooding as well as exploring new ways to pay for improvements. Whilst it may be possible to fully pay for some projects using available national sources of funding, it is likely they will require a wider range of funding sources (including contributions from developers, local communities and businesses as beneficiaries). The Strategy provides detail on the additional funding options that will be considered in South Gloucestershire.

As our understanding of flood risk improves and evidence is forthcoming specific flood mitigation schemes and activities will be developed to address flood risk in those areas at greatest risk, where resources and partnership funding is available.

What happens next?

Although the Strategy is for the initial period up to 2020, we believe that continued monitoring and review are essential to ensure that flood risk management is responsive to changes. This is especially important in the early years when there are expected to be new requirements for sustainable drainage, changes in funding and design of flood management schemes and improvements in our knowledge of flood risk across South Gloucestershire.

In the short-term flood risk management activities will be focussed on improving our understanding of flood risk across South Gloucestershire now and in the future, how this affects the public, local communities and businesses and the actions that can be undertaken now to address that risk, where resources and funding are available. We will also focus our efforts on identifying and securing funding for longer-term flood risk management activities, and developing business cases for undertaking on-the-ground flood alleviation schemes for areas identified to be at greatest risk of flooding across South Gloucestershire.



Flooding in Mission Road, South Gloucestershire

Further information on funding sources is provided in **Section 11** of the Strategy

Section 12 of the Strategy provides further information on the next steps for the Strategy