

# South Gloucestershire Local Flood Risk Management Strategy 2022-2027

Summary Report

South Gloucestershire Council

July 2022



## 1. Introduction

This document is a summary of South Gloucestershire Council's Local Flood Risk Management Strategy (LFRMS) (2022 – 2027). The strategy has been aligned with the latest guidance and legislation. The purpose of the strategy is to:

- Set out our approach to managing flood risk from local sources (i.e. surface water, ordinary watercourses and groundwater).
- Provide an overview of how we undertake our flood risk management responsibilities as required under the Flood and Water Management Act 2010.
- Outline how we will work with others to manage all sources of flooding within South Gloucestershire and neighbouring catchments.

**Figure 1: Flooding in Frampton**



The strategy considers all functions and sources of flooding to recognise where flood risk responsibilities coincide, and where partnership working and jointly funded projects could be undertaken. The aims and objectives of this strategy reflect the objectives that have been set in the Environment Agency's **National Flood and Coastal Erosion Risk Management Strategy (NFCERMS)**<sup>1</sup> for England (adopted 25 September 2020). A new Action Plan has also been produced that consists of both;

- a) District Wide Actions which are generic across the administrative area; and
- b) Priority Catchment Actions, whereby all catchments within the administrative area have been prioritised in order to focus the flood risk management on the ten at highest risk of flooding.

The aims of the Local Flood Risk Management Strategy have been divided into six objectives, which have been aligned with the national strategy objectives:

1. **Evidence:** We will enhance our strategic understanding of flood risk from all sources, both in the present day and with climate change
2. **Resilience/Awareness:** We will work with communities to raise greater awareness of present and future flood risk through engagement, support and education to help them to become more resilient to future flood risk, considering the effects of climate change on different sources of flooding.
3. **Adaptation:** We will work with communities to implement adaptive approaches to enhance the natural and built environment (including: Asset Management, Natural Flood Management, Habitat Restoration and Sustainable Drainage Systems).
4. **Collaboration:** We will work with all risk management authorities and stakeholders to achieve a consistent, co-ordinated and risk-based approach to flood risk management.
5. **Sustainability:** We will contribute positively to sustainable growth and development, and support environmental net gain by influencing wider development, redevelopment and regeneration plans to deliver flood risk benefits, whilst enhancing biodiversity and promoting flood risk management measures that work with natural processes in our catchments.
6. **Opportunities:** We will seek opportunities (including funding, research and innovation) from existing and new sources to invest in making communities resilient to flooding now and in the future.

<sup>1</sup> National Flood and Coastal Erosion Risk Management Strategy. Environment Agency 2020. <https://www.gov.uk/government/publications/national-flood-and-coastal-erosion-risk-management-strategy-for-england--2>

It is the principal aim of this strategy to support communities in becoming more resilient to future flood risk. These aims will be met by the projects that are taken forward in future work programmes and by the actions set out in the action plan.

Investigations, new information, changing budgets and funding contributions, and subsequent flood events will alter what happens over the lifetime of the strategy and minor changes may be made to the documents including the flood maps. Regular reviews of progress against the action plan will be conducted so that we can monitor the flood risk situation and adjust priorities as necessary.

## 1.1 Strategy partners

Within South Gloucestershire there are a range of different organisations that have responsibility for flood risk management. In developing this strategy, South Gloucestershire Council worked in partnership with Risk Management Authorities to achieve an effective strategy and action plan for tackling and reducing the impacts of flooding across the administrative area. The partners included in the development of this strategy are:

- South Gloucestershire Council
- Avon Wildlife Trust
- Bath and North East Somerset Council
- Bristol Avon Catchment Partnership
- Bristol City Council
- Environment Agency
- Gloucestershire County Council
- National Highways (previously Highways England)
- Lower Severn Internal Drainage Board
- Parish Councils
- Frome Catchment Innovation Programme
- Wessex Water
- Wiltshire Council

## 1.2 Consultation

Public Consultation on the draft strategy was undertaken between February and May 2022. The strategy was then updated based on the feedback received. The strategy was presented to elected members and senior officers in June and July 2022.

## 1.3 Legislative Context

Within South Gloucestershire, national, regional and local legislation and policy provide a legislative framework under which flood risk is managed. At the core of this are the National Flood Risk Management Objectives which are set out within the **NFCERMS**<sup>1</sup>. The Strategy's long-term vision is for: a nation ready for, and resilient to, flooding and coastal change – today, tomorrow and to the year 2100 and this is supported by three long term ambitions, underpinned by evidence about future risk and investment needs;

- Climate resilient places
- Today's growth and infrastructure – resilient in tomorrow's climate

- A nation ready to respond and adapt to flooding and coastal change

Within South Gloucestershire, the Council has developed local strategies and policies, which build on national guidance, to meet housing and economic development growth. Details of these can be found on the [South Gloucestershire website](#)<sup>2</sup>. There are specific documents available for [developers and designers, land and homeowners](#)<sup>3</sup>, and also for [surface water management](#)<sup>4</sup>, which sets out how SuDS should be delivered in South Gloucestershire.

[South Gloucestershire Council's Flood Risk webpage](#)<sup>5</sup> provides information and advice for residents for managing flood risk, including emergency contact numbers and guidance documents on how to identify whether properties are at risk, types of flooding, preventing flooding, and instructions of what to do in a flood emergency.

## 1.4 Flood resilience

In line with the [NFCERMS](#)<sup>1</sup>, South Gloucestershire Council intend to focus on flood and coastal resilience ahead of conventional Flood and Coastal Erosion Risk Management (FCERM) schemes when managing flood risk within the administrative area.

Resilience is defined in the NFCERMS as *“The capacity of people and places to plan for, better protect, respond to, and to recover from flooding and coastal change. Places can achieve this by: making the best land use and development choices, better protecting people and places, responding to and recovering from flooding and coastal change whilst all the time adapting to climate change”*.

The components of resilience (Figure 2) identifies four key themes which are fundamental to flood resilience: place making, protect, respond and recover. These themes have been considered when developing the action plan.

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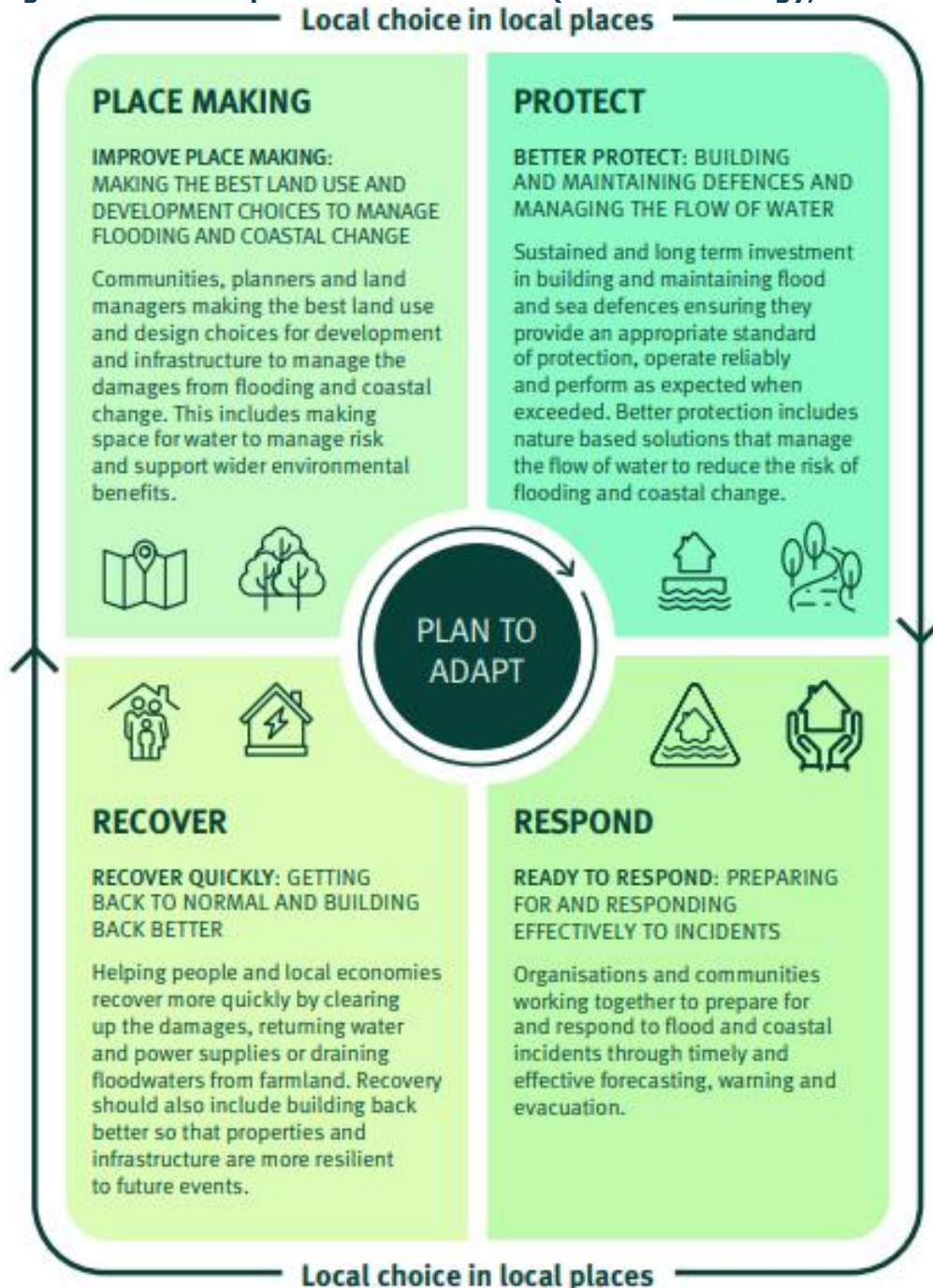
<sup>2</sup>Planning and development related to drainage webpage. South Gloucestershire Council. (2021) <https://www.southglos.gov.uk/environment/drainage-and-flood-risk-management/planning-development-related-drainage/>

<sup>3</sup> Land Owners. South Gloucestershire Council. <https://www.southglos.gov.uk/documents/Land-ownersv2-final-Draft-290616.pdf>

<sup>4</sup> Surface Water Management. South Gloucestershire Council. <https://www.southglos.gov.uk/documents/Surface-water-management-v2Final-Draft-300616.pdf>

<sup>5</sup> Flood Risk webpage. South Gloucestershire Council. (2021) <https://www.southglos.gov.uk/environment/drainage-and-flood-risk-management/flood-risk-2/>

**Figure 2: The components of resilience (NFCERM Strategy, EA 2020)**

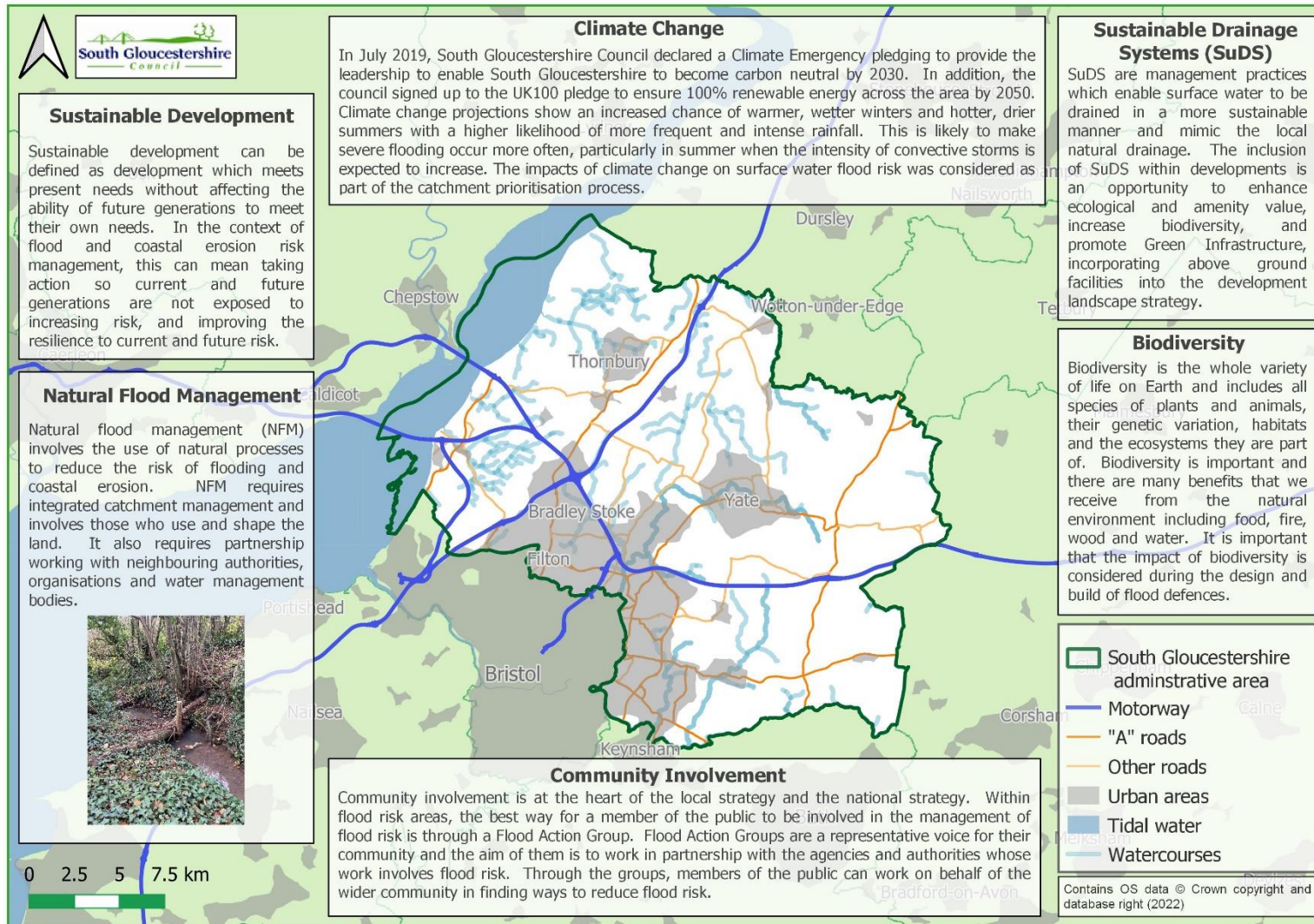


## 1.5 Key Themes

South Gloucestershire Council have identified several key flood risk management themes which are important for this cycle of the LFRMS. These are Climate Change, Sustainable Development, Natural Flood Management, Biodiversity, Community Involvement and Equalities. These key themes are central to the Strategy and formed the basis of the action plans.

A brief summary of the key themes is shown in Figure 3 but for more details see Section 1.5 of the Local Flood Risk Management Strategy document.

**Figure 3: Key themes for flood risk management in South Gloucestershire**



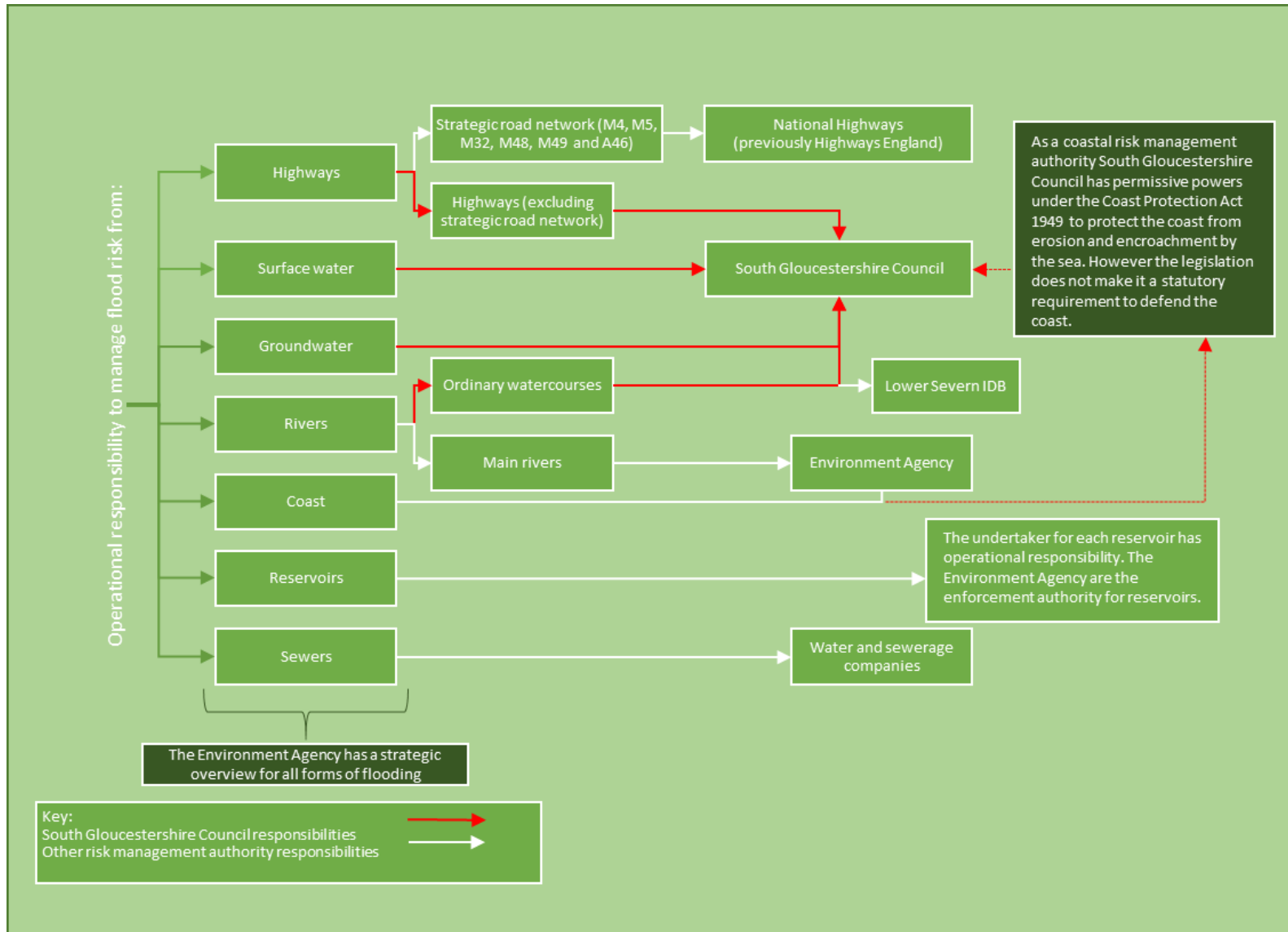
## 2. Roles and Responsibilities

As a Lead Local Flood Authority, South Gloucestershire Council's responsibilities relate to managing 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 flood risk from other sources. The responsibility in South Gloucestershire for different sources of flooding is shown in Table 1 and Figure 4. For more details see Section 2 of the Local Flood Risk Management Strategy document.

**Table 1:- South Gloucestershire flood risk responsibilities**

	Flood Source	Risk Management Authority	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.
	Highways	South Gloucestershire Council / National Highways	Flooded roads can occur when the amount of water on the road is more than the road drainage can cope with.
Other Sources	Sea (Tidal)	Environment Agency / South Gloucestershire as Coastal Protection Authority	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.

**Figure 4: Risk Management Authorities responsible for managing Flood Risk in South Gloucestershire**





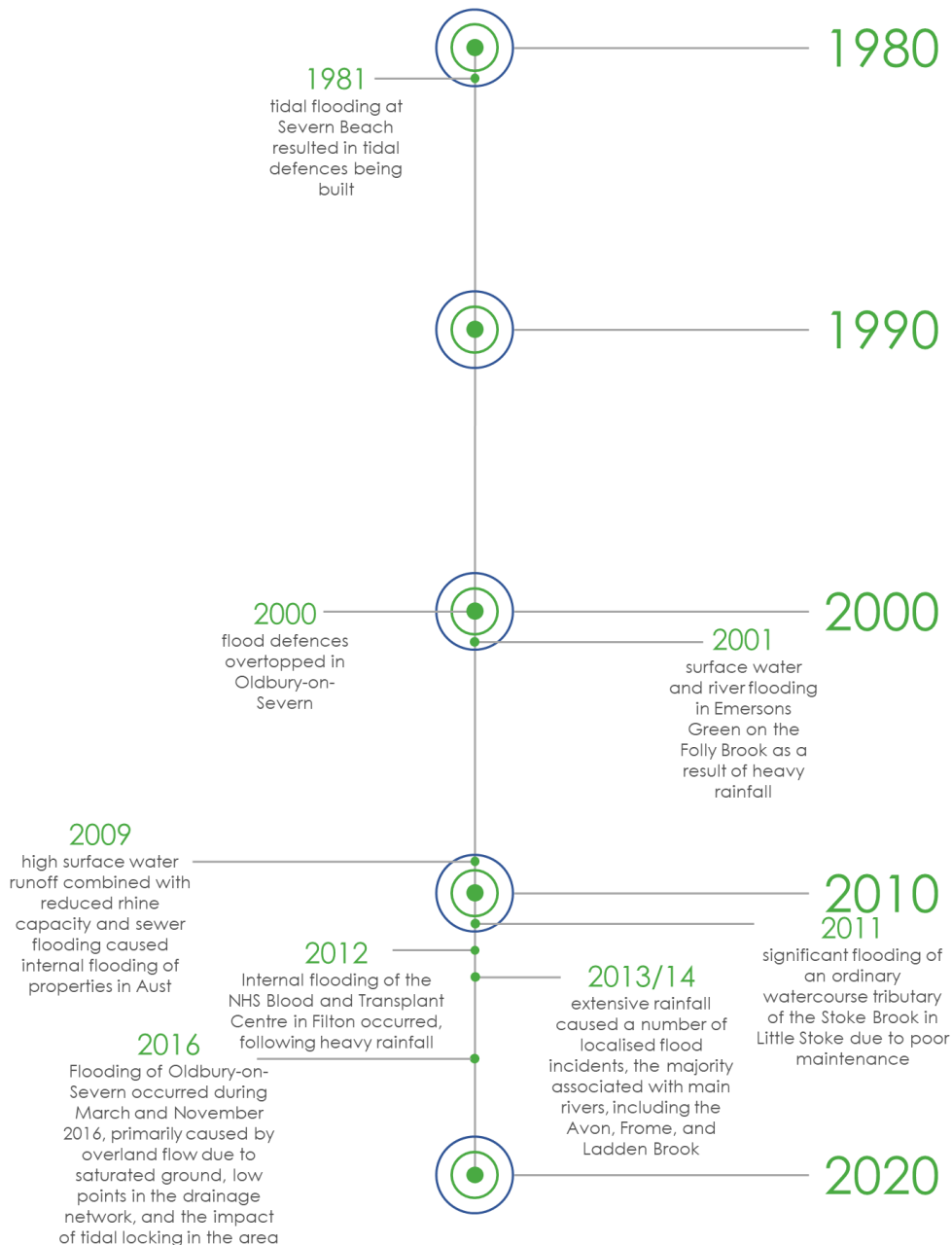
### 3. Flood Risk in South Gloucestershire

South Gloucestershire is primarily at risk of flooding from surface water, rivers and the sea (Figure 6). 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. For more details see Section 3 of the Local Flood Risk Management Strategy document.

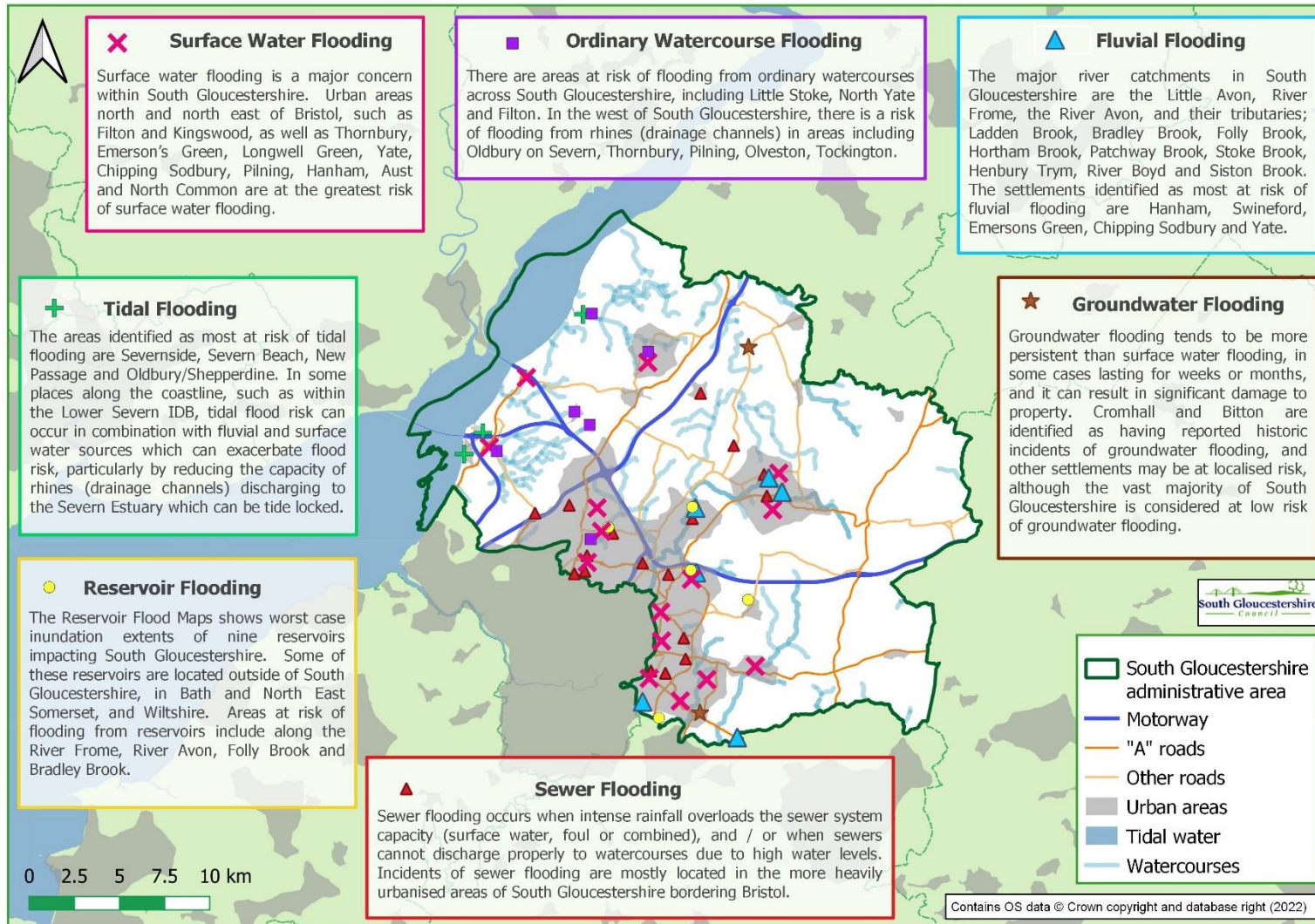
#### 3.1 Historic Flood Events

South Gloucestershire has a history of flooding in many different locations from fluvial, tidal, surface water, sewer and groundwater sources. The key historical incidents of flooding identified are shown in Figure 5.

**Figure 5: Timeline of key historic flood events**



**Figure 6: Sources of flood risk and key locations in South Gloucestershire**



## 3.2 Climate Change

In July 2019, South Gloucestershire Council declared a **Climate Emergency**<sup>6</sup> pledging to provide the leadership to enable South Gloucestershire to become carbon neutral by 2030. In addition, the council signed up to the UK100 pledge to ensure 100% renewable energy across the area by 2050.

The impacts of climate change are well documented and have a significant influence on flood risk in South Gloucestershire. Climate change projections show an increased chance of warmer, wetter winters and hotter, drier summers with a higher likelihood of more frequent and intense rainfall. This is likely to make severe flooding occur more often, particularly in summer when the intensity of convective storms is expected to increase, leading to greater overland flow as a result of incapacity in existing systems. For more details see Section 3.9 of the Local Flood Risk Management Strategy document.

## 4. Achievements over the last six years

Section 4 of the Local Flood Risk Management Strategy document sets out the progress and achievements that have been made by South Gloucestershire Council since 2015 when the previous strategy was published. These include:

- South Gloucestershire Council monitor Key Performance Indicators (KPIs) as part of its statutory responsibilities and successfully carried out 14 Enforcement Actions during the period 2015 to 2021.
- South Gloucestershire Council have undertaken two Section 19 flood investigations for flood events which occurred in **Oldbury-on-Severn**<sup>7</sup> and **NHS Blood & Transplant Centre, Filton**<sup>8</sup>.
- Flood alleviation schemes have been completed as part of the Challenge Fund flood resilience works (Tranche 2A), funded by the Department for Transport.
- South Gloucestershire Council commissioned the Flood and Wildlife Advisory Group in 2020 to work with farmers and landowners to implement Natural Flood Management (NFM) features.
- South Gloucestershire Council have undertaken surface water flood modelling in Thornbury (2020) and Yate/Chipping Sodbury (2021) to update existing evidence, to better understand properties and infrastructure most at risk from flooding, to better understand flood mechanisms and the existing drainage network and to inform priorities for future investment.
- Bristol City Council was awarded funding by DEFRA in 2021 as part of the Flood and Coastal Resilience Innovation Programme for the **Frome Catchment Innovation Programme**<sup>9</sup>. South Gloucestershire Council is one of the key partners involved in the programme.
- The **River Frome Reconnected**<sup>10</sup> is a partnership project between South Gloucestershire Council, Bristol City Council, Wessex Water, the Environment Agency and the Bristol Avon Catchment Partnership (BACP). The project started in 2017 and is now delivering an ongoing integrated joint work programme responding to and managing flood risk and reconnecting people, communities and the River Frome to nature, ensuring resilient landscapes/sustainable land management.

6 Climate Emergency. South Gloucestershire Council. <https://www.southglos.gov.uk/environment/climate-change/climate-emergency/>

7 Flood Investigation (Section 19 Report) NHS Blood & Transport Centre. South Gloucestershire Council. 2017. <https://www.southglos.gov.uk/documents/Section-19-Flood-report-Filton-v7.pdf>

8 Flood Investigation (Section 19 Report) Oldbury-on-Severn. South Gloucestershire Council. 2017. <https://www.southglos.gov.uk/documents/Oldbury-on-Severn-Flood-Report-May-2017.pdf>

9 Innovative projects to protect against flooding selected: <https://www.gov.uk/government/news/innovative-projects-to-protect-against-flooding-selected>

10 River Frome Reconnected Project: <https://www.southglos.gov.uk/environment/frome-reconnected-project/>

- The **Avonmouth Severnside Enterprise Area**<sup>11</sup> (ASEA) Ecology Mitigation and Flood Defence Project is currently under construction and is intended to support the growth of the Avonmouth Severnside Enterprise Area.

## 5. Catchment prioritisation

To identify areas that are at significant risk of flooding from local sources, an assessment of flood risk has been undertaken for South Gloucestershire. This assessment has identified 10 Priority Catchments within the administrative area to help inform where the actions should be focused as shown in Figure 8.

For the purposes of this assessment South Gloucestershire has been split into 33 areas to allow a catchment based approach to be taken. To identify the Priority Catchments data has been used from the Risk of Flooding from Surface Water dataset and climate change assessment as well as a series of secondary datasets, including historic flooding and flood risk from other sources (fluvial & tidal and groundwater) which were used to weight the Priority Catchments.

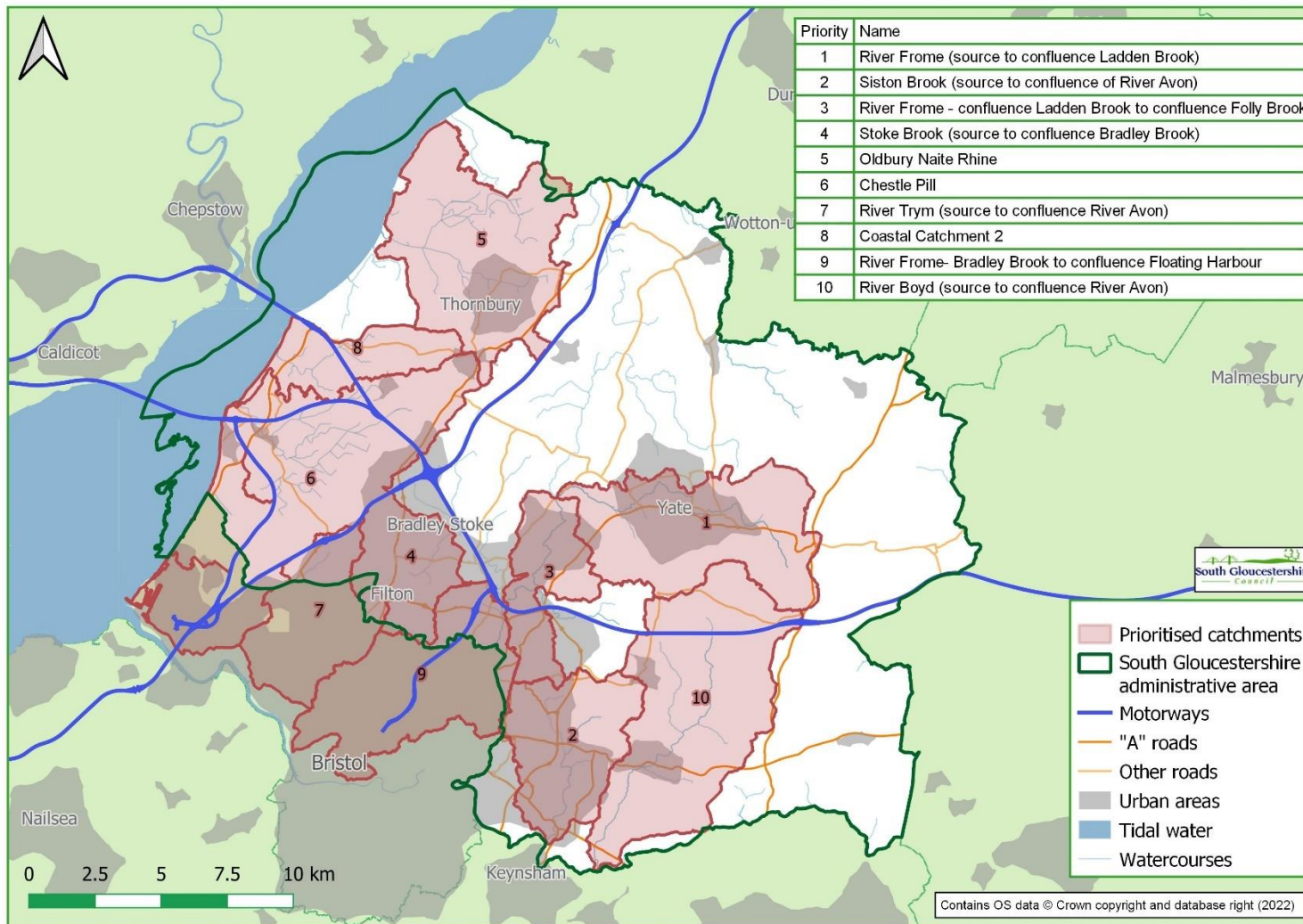
Alongside this a series of tertiary datasets were used to inform, support and challenge the prioritisation. These included details of potential investment within the catchments, potential for tide locking, risk of flooding from reservoirs and any cross-boundary issues that were identified – these datasets were provided by the Council, Wessex Water, Lower Severn IDB, Environment Agency, neighbouring authorities and parish councils. For more details see Section 5 of the Local Flood Risk Management Strategy document.

**Figure 7: Flooding at Perrinpit Road**



<sup>11</sup> Avonmouth Severnside Enterprise Area (ASEA) Ecology Mitigation and Flood Defence Project: Avonmouth and Severnside Enterprise Area – Ecology Mitigation and Flood Defence Project ([asea-flood-ecology.co.uk](http://asea-flood-ecology.co.uk))

**Figure 8: Priority Catchments**



## 6. Action Plans

### 6.1 District Wide Action Plan

A District Wide action plan has been created which provides actions which apply across South Gloucestershire. The action plan has been developed using the components of resilience (Figure 2), which identifies four key themes which are fundamental to flood resilience: place making, protect, respond and recover. These themes have been aligned to the actions emphasising the importance of flood resilience in local flood risk management.

### 6.2 Priority Catchment Action Plan

For the 10 identified Priority Catchments, a catchment specific action plan has been developed. As with the District Wide action plan, the specific actions have been developed with an emphasis on improving flood resilience, through developing emergency plans with an emphasis on flood recovery as well as preparedness, encouraging uptake of flood warning and alerts (where these are available in areas at risk of fluvial and tidal flooding) and enhancing the existing evidence base of surface water flood risk. The Action Plans are located within Appendix A of the Local Flood Risk Management Strategy document.

## 7. Implementation monitoring and review

This local flood risk management strategy for 2022 – 2027 represents a co-ordinated area-wide approach to flood risk management. The key focus for the next five years is to increase flood resilience. The focus on delivering actions will be based on the 10 Priority Catchments identified. However, opportunistic actions that can be taken will be considered on their merits, i.e. any value for money project with positive benefits, irrespective of its location. Funding capital works can be challenging, especially where projects are required to have some partnership contributions in order to proceed. It may be that in many areas the risk of flooding is managed through early flood warnings (where these are available in areas at risk of fluvial and tidal flooding) and local resilience measures.

Where appropriate, South Gloucestershire Council, will seek to fund schemes through multiple routes, details of several funding sources currently available can be found on the [DEFRA website](#)<sup>12</sup>. Additionally, the Council will continually seek new sources of funding to support our flood risk management objectives.

The Action Plans will be monitored annually or following a significant flooding incident. This will involve assessing which actions have been delivered and determining whether there has been any change to the prioritisation of actions, in line with current flood risk management priorities and funding availability.

### 7.1 Review

The Strategy has been developed to deliver a short to medium (6-year) improvement plan to establish a sound evidence and knowledge base upon which to develop a longer-term investment plan for local flood risk management activities in South Gloucestershire.

It is proposed that a review of the Strategy should be scheduled for 2027, and thereafter every six years (or more regularly) to coincide with the requirement under the Flood Risk Regulations 2009 to revise the Flood Risk Management Plan.

However, the Strategy should be viewed as a dynamic strategy and may require review more regularly to recognise specific changes. For more details see Section 7 of the Local Flood Risk Management Strategy document.