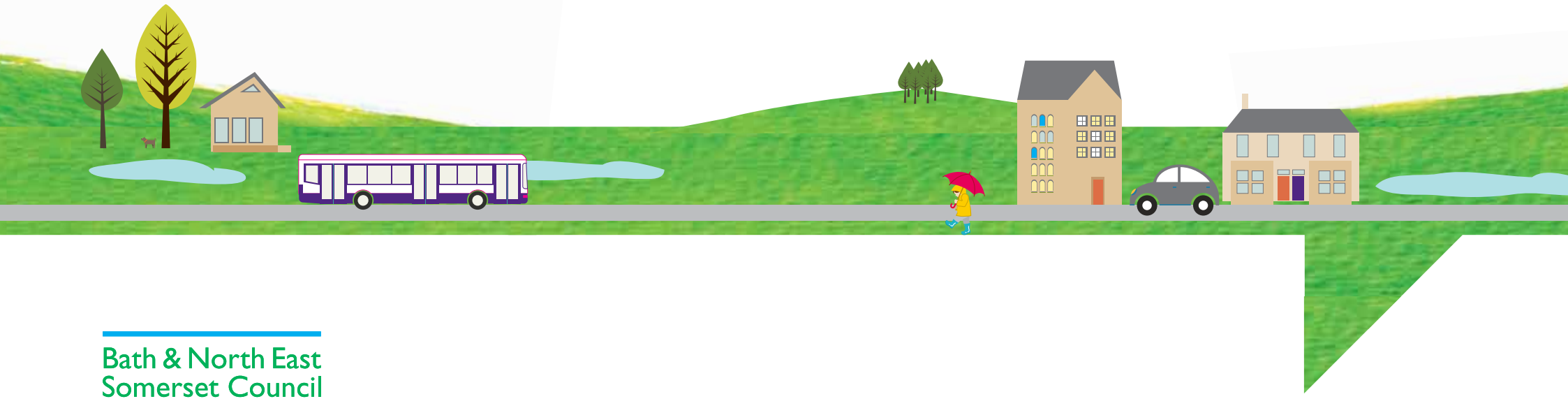
A ten year plan for the management of flooding from local sources

Bath & North East Somerset's
Local Flood Risk Management Strategy
2015 – 2025

Issue 1 – Draft for Consultation



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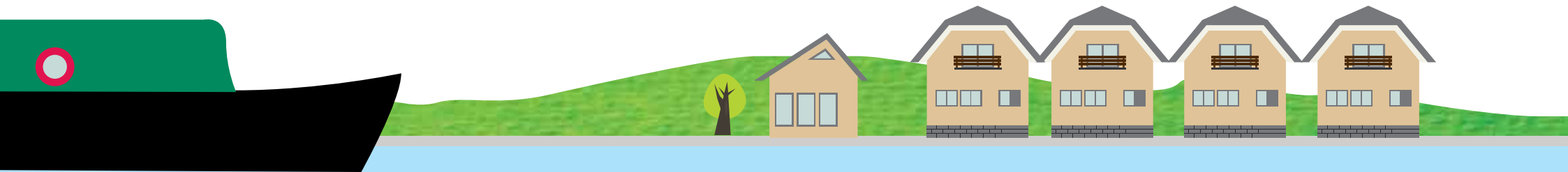
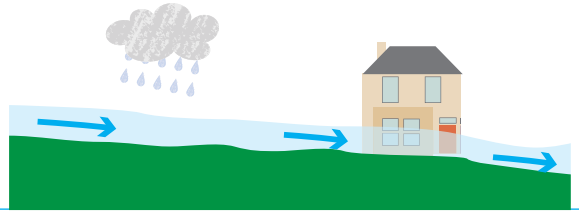
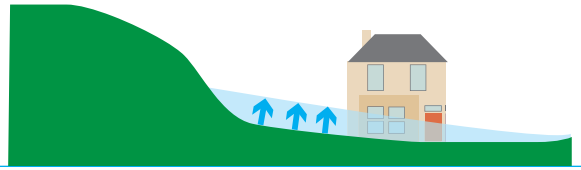
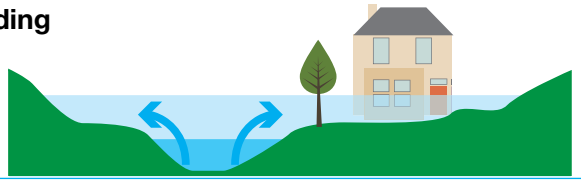


Local Flooding

This document covers the ten year plan for the management of flooding from local sources in Bath & North East Somerset. It is therefore important to understand what is classified as *local* flooding. The summary below outlines what is classified as local flooding and what is not.

Local flooding includes:

Surface water flooding 	**Surface water flooding** (also referred to as pluvial flooding or flash flooding), is rainwater, snow and other precipitation which runs across the surface of the ground and pools in low lying areas. To be classed as surface water flooding it must not have entered a watercourse, drainage system or public sewer. This type of flooding often occurs quickly during, or shortly after, a high intensity storm.
Groundwater flooding 	**Groundwater flooding** occurs where the water levels in rock and soil become high enough for the water to appear near to or above the ground surface. This may happen, for example, where there are underlying gravels, or porous or fractured rocks, allowing water to pass through. Flooding from natural springs would be classed as a form of groundwater flooding. Slow response means that groundwater flooding can occur a long time after prolonged or heavy rainfall and can last for a long time (often several weeks or months).
Ordinary Watercourse flooding 	**Ordinary watercourse flooding**, also referred to as fluvial flooding, occurs when water overtops the banks of a stream or smaller watercourse. This can occur because there is more water draining into the channel than it can hold, or because it is blocked. Flooding from Main Rivers, (as defined by the Environment Agency) is not classed as 'local' flooding.

Local Flooding does not include:

Main River flooding	Coastal flooding	Sewer flooding	Reservoir flooding	Flooding caused by burst water mains

Foreword

Flooding results in significant impacts to local communities, businesses, the economy and our environment. It causes damage to property and infrastructure, and results in distress and disruption to people.

Following the severe flooding in summer 2007 Government commissioned Sir Michael Pitt to undertake a detailed review of the flood events and to make recommendations about how flooding should be managed. Government accepted the findings of the Pitt Review, which resulted in new legislation in 2010 known as the Flood and Water Management Act. This gave Bath & North East Somerset Council, along with other local authorities across England and Wales, new responsibilities to manage flood risk from:

- surface water runoff;
- groundwater, and;
- Ordinary Watercourses.

Flood risk from these sources is known as 'local flood risk' in the legislation.

One of the key components of the Flood and Water Management Act (2010) was the requirement for the Council, under its duties as a Lead Local Flood Authority, to "develop, maintain, apply and monitor a strategy for local flood risk management (local flood risk management strategy)."

The Local Flood Risk Management Strategy:

- sets out objectives for managing local flood risk;
- identifies the areas where local flood risk is most significant;
- considers how the Lead Local Flood Authority will work in partnership with other organisations who have a responsibility for flood risk management;
- identifies how local communities can be involved and helped to understand how to reduce their exposure to flood risk, and;
- set out the actions the Lead Local Flood Authority will take, in partnership with others, to manage local flood risk.

Flooding in Bath & North East Somerset occurs from rivers, surface water runoff, groundwater and drainage networks (e.g. sewers and highway drainage). No one organisation has responsibility to manage flood risk from all of these sources. Therefore, it is vital the Council, as a Lead Local Flood Authority, works with others to fulfil its responsibilities and manage flood risk for communities, businesses and the environment. This Local Flood Risk Management Strategy has been developed in collaboration with the Strategic Flood Board, which includes representatives from Bath & North East Somerset, the Environment Agency, Wessex Water, Bristol Water and the Canals and Rivers Trust.

As the Lead Local Flood Authority, we have set up an Operational Flood Working Group which will address specific flooding or drainage issues with a view to developing practical measures to improve drainage or reduce flood risk. The importance of working with local communities is also recognised, and this will primarily be achieved through Local Flood Representatives who act as a point of contact between local communities and Bath & North East Somerset Council's Drainage & Flooding team (who undertake most of the roles and responsibilities of the Lead Local Flood Authority).

We must all recognise that flooding cannot be completely prevented, but its impacts can be reduced and managed through investment, education and good planning. This is Bath & North East Somerset's first Local Flood Risk Management Strategy for delivery over the next ten years. It represents the first step in ensuring we have a sound and deliverable strategy to manage local flood risk.

Councilor Liz Richardson
(Chair of the Bath & North East Somerset Strategic Flood Board).

Glossary

Please refer to Appendix F at the back of this document.

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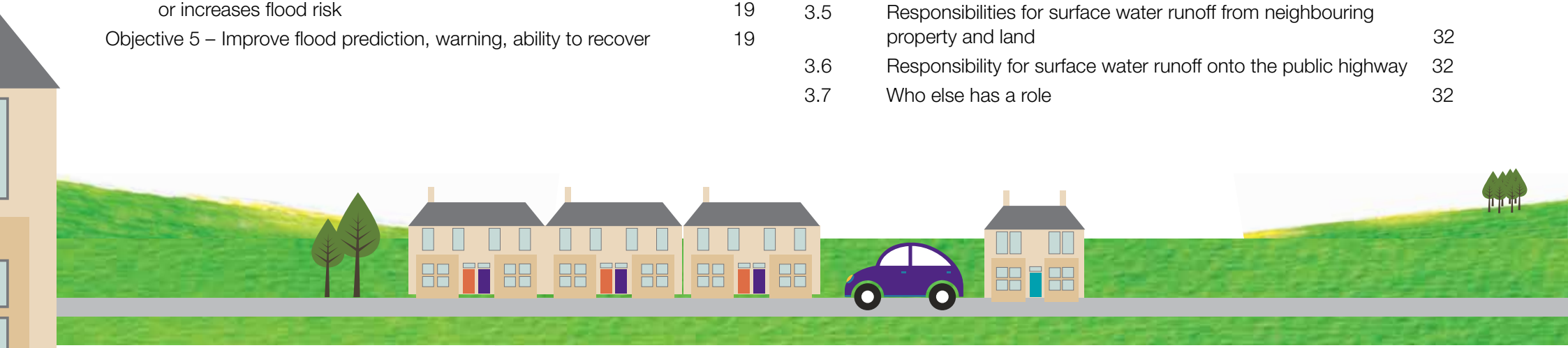

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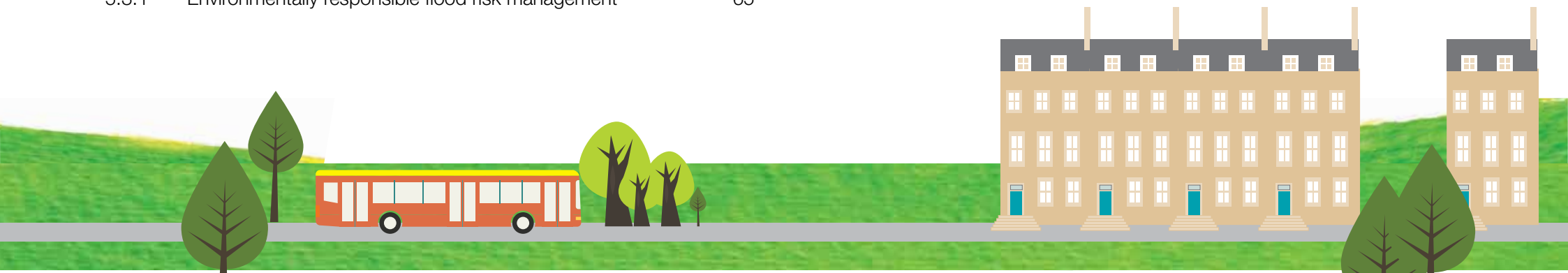


Section 1
Introduction

1.1 Context of the Local Flood Risk Management Strategy

Bath & North East Somerset covers an area of approximately 350 km^2, and two thirds of the study area is designated as a green belt. The largest urbanised areas within Bath & North East Somerset are Bath, Keynsham, Midsomer Norton and Radstock, and there are numerous villages and hamlets spread across 49 rural parishes which accommodate a substantial rural population.

Flooding is an important issue which affects individuals, businesses and communities, and can occur from rivers, surface water runoff, groundwater, reservoirs, canals and drainage networks (e.g. sewers and highway drainage). A regional Surface Water Management Plan was prepared in 2015 and identified that Bath, Keynsham, Whitchurch, Chew Magna, Chew Stoke, West Harptree, Midsomer Norton and Radstock are the locations in Bath & North East Somerset which have suffered the most flooding. This has affected people, property, critical infrastructure and key transport routes.

Until recently there has been limited understanding about who is responsible for different types of flooding and what can be done to reduce the risks. Responsibilities have been clarified in recent policy and legislation changes. Following these changes it is important that all organisations involved in managing flooding work in partnership to understand the causes of flooding and what can be done to manage it. This document sets the strategy for ensuring this is achieved.

1.2 The role of the Local Flood Risk Management Strategy

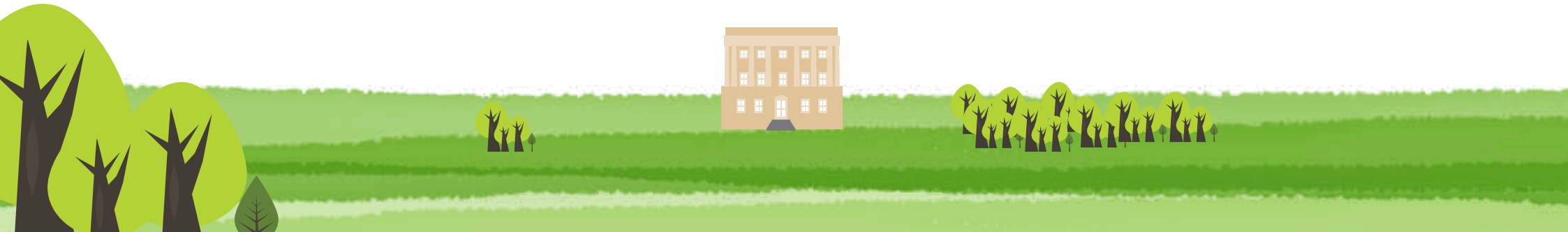
To improve the organisation of flood risk management in England, legislation was passed in 2010 called the Flood and Water Management Act (2010). Under the Flood and Water Management Act (2010) Bath & North East Somerset Council is now a Lead Local Flood Authority[1] with new duties and powers to take a leadership role on the management of local flood risk (surface water, Ordinary Watercourses[2] and groundwater), through working in partnership with others. This is in addition to other relevant statutory responsibilities the Council already has as the Local Highways Authority, Local Planning Authority, and Emergency Planning Authority.

Under the Flood and Water Management Act (2010) one of the statutory requirements was for each Lead Local Flood Authority to develop, maintain, apply and monitor a Local Flood Risk Management Strategy. The Local Flood Risk Management Strategy must:

- communicate the roles and responsibilities of the various Risk Management Authorities in Bath & North East Somerset (see Section 3 and Appendix C);
- identify 'locally significant' flood risk which are the priority risk areas (see the Regional Surface Water Management Plan and Section 4);
- set objectives for managing 'locally significant' flood risk (see Section 2);
- outline measures to achieve the objectives set above (see Section 5);
- identify costs and benefits of the proposed measures, and how they will be paid for (see Section 6 and Appendix E);
- communicate how the Local Flood Risk Management Strategy contributes to wider environmental objectives (refer to the accompanying Strategic Environmental Assessment), and;
- provide information on the review process for the Local Flood Risk Management Strategy (see Section 7.3).

1 The majority of the Lead Local Flood Authority roles and responsibilities are undertaken by the Drainage & Flooding team within the Council.

2 An Ordinary Watercourse is any watercourse, ditch, stream not classified as a Main River.



The purpose of the Local Flood Risk Management Strategy is to help inform the Council, partners and communities about local flood risk, where it is most significant, how it can be managed, and who is responsible for doing so. It sets out the objectives for doing this, and identifies the key actions we will take as the Lead Local Flood Authority, in partnership with other Risk Management Authorities, to manage local flood risk. Flooding cannot be completely prevented, though its impacts can be reduced and managed through investment and good planning. Therefore, through the Local Flood Risk Management Strategy there is also a need to manage the expectations of partners and communities to achieve better local flood risk management that benefits communities in Bath & North East Somerset, and establish new policies that will help minimise the impact of flooding.

1.3 Who is the Strategy aimed at?

The Local Flood Risk Management Strategy is aimed at a wide range of partners and stakeholders, as each has an important role to play in managing local flood risks in the Bath & North East Somerset area. These include:

- communities, parish councils, flood action groups, and individuals;
- businesses;
- voluntary groups;
- developers and their consultants;
- Risk Management Authorities (see section 3.3);
- members of the Strategic Flood Board;
- members of the Operational Flood Working Group, and;
- the West of England Flood Risk Managers Group.

Further details on members within these groups are included in the Glossary in Appendix F.

1.4 What types of flooding are covered by the Strategy

In line with the Councils statutory responsibilities as a Lead Local Flood Authority, the Local Flood Risk Management Strategy focuses on flood risk from local sources. Please refer to the Local Flooding page at the start of this document for further details.

The Local Flood Risk Management Strategy does however also outline the roles and responsibilities of other Risk Management Authorities who manage other types of flooding within Bath & North East Somerset, and how the Lead Local Flood Authority are working in partnership with these organisations.

More details about roles and responsibilities of Risk Management Authorities are included in Section 3 and Appendix C, and information on local flood risk in Bath & North East Somerset is included in Section 4.

1.5 The area covered by the Strategy

Bath & North East Somerset covers an area of approximately 350 km^2, and two thirds of the study area is designated as a green belt.

The largest urbanised areas within Bath & North East Somerset are Bath, Keynsham, Midsomer Norton and Radstock, and there are numerous villages and hamlets spread across 49 rural parishes which accommodate a substantial rural population.

This document presents the Local Flood Risk Management Strategy for the whole of the Council's area which is depicted in Figure 1-1.

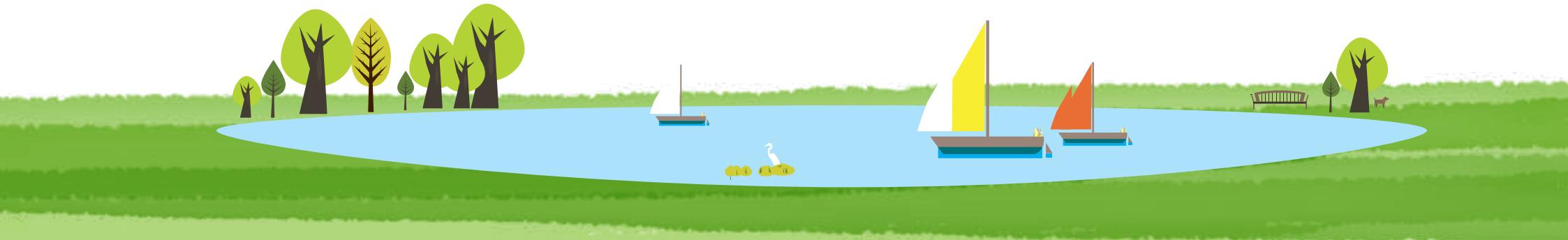
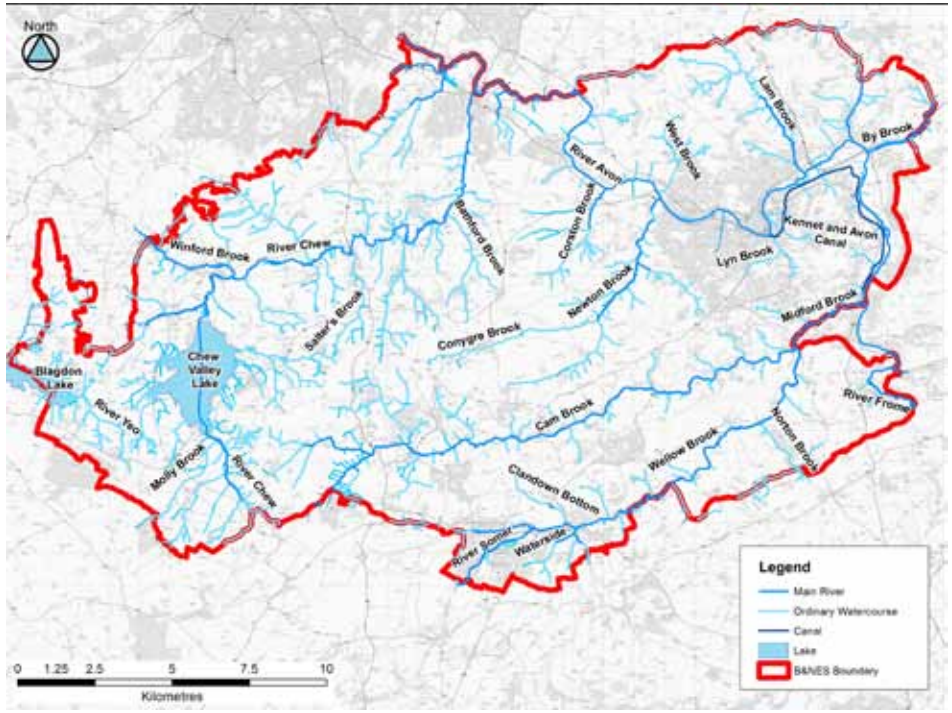


Figure 1-1 Geographical extent of Bath & North East Somerset Council (courtesy of JBA Consulting)[3] area



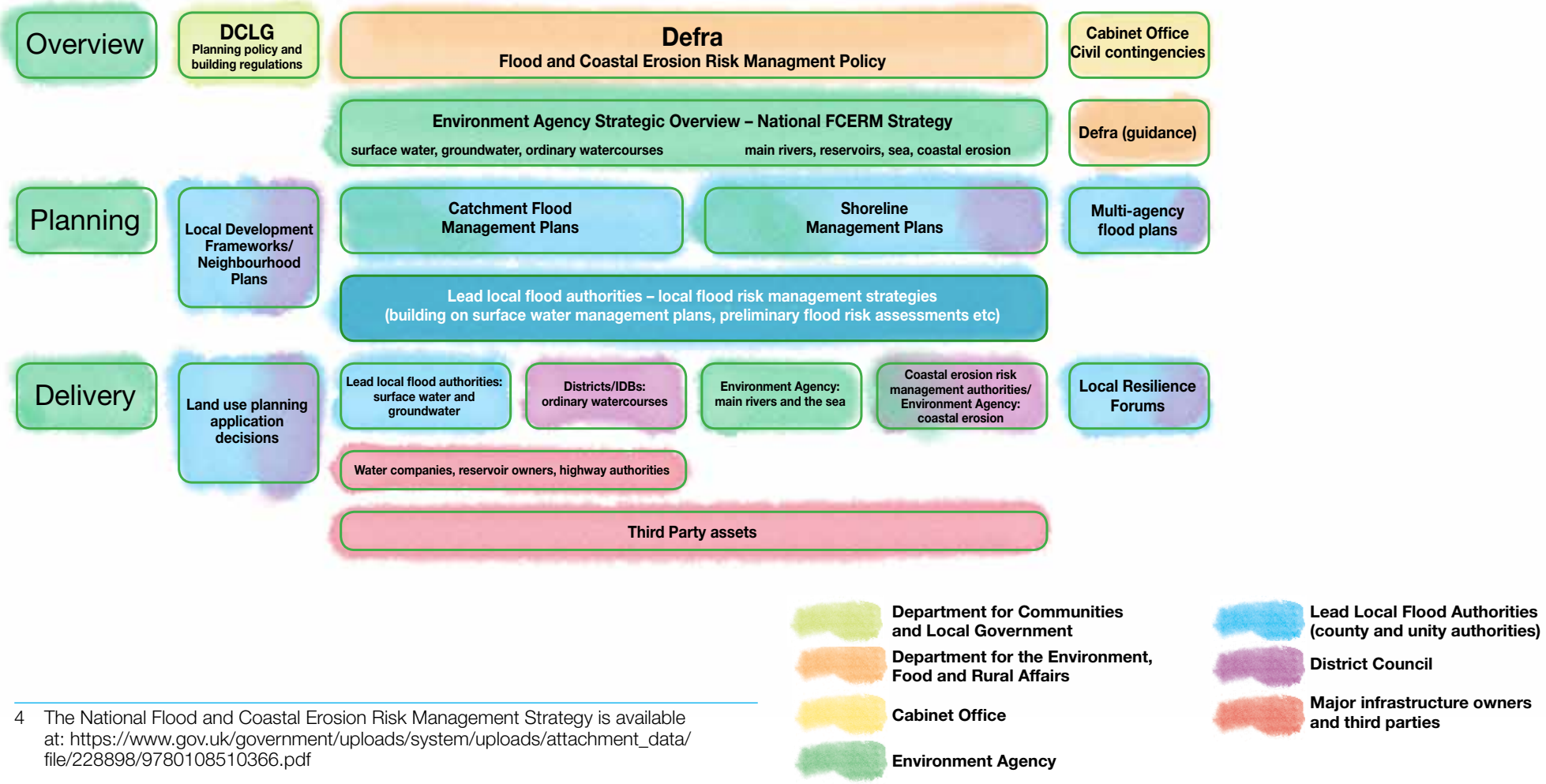
3 JBA Consulting (2015), Bath & North East Somerset Council Surface Water Management Plan

1.6 Links to other plans, policies and legislation

There are a number of additional important flood related documents which have been produced for Bath & North East Somerset such as the Strategic Flood Risk Assessment and Surface Water Management Plan. Figure 1-2 outlines how the Local Flood Risk Management Strategy links with these other flood and coastal erosion risk management strategies and plans.

There are also a number of pieces of legislation, planning documents and policies linked to the management of flood risk which also link to this Local Flood Risk Management Strategy, but again are not included specifically within it to avoid duplication. Details of these are included in Appendix A.

Figure 1-2 How this Strategy fits in with other planning initiatives (extracted from National Flood and Coastal Erosion Risk Management Strategy)[4]



4 The National Flood and Coastal Erosion Risk Management Strategy is available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228898/9780108510366.pdf

1.7 How the Strategy has been prepared

The Local Flood Risk Management Strategy document has been developed by the Council as the Lead Local Flood Authority. To ensure a coordinated approach to flood risk management in the Bath & North East Somerset area, the Strategic Flood Board have been consulted to ensure the Local Flood Risk Management Strategy aims and objectives align with those of other Risk Management Authorities.

A stakeholder workshop has also been undertaken to outline the purpose and function of the Local Flood Risk Management Strategy to a wider audience and gain initial feedback on the objectives and actions explained within this document.

At this stage the Local Flood Risk Management Strategy is still considered to be a draft and has now been opened up for further public consultation to ensure this strategy is considered to be effective and suitable for the whole of the Bath & North East Somerset region. Once this consultation period is completed at the end of October 2015 the Local Flood Risk Management Strategy will be updated appropriately based on the comments received.

The full approach for stakeholder engagement is provided in Appendix B.

In addition, given the number of designated sites and cultural heritage interest in the Bath & North East Somerset district, it was felt that a Strategic Environment Assessment Report should be completed to accompany this Local Flood Risk Management Strategy and give consideration to the environmental implications of the objectives included within this strategy.

1.8 How the public will be involved

The public have an important role in influencing this document. Part of the Local Flood Risk Management Strategy process is the consultation process as outlined above. This allows the public and other partners of the Council to have their say on the Local Flood Risk Management Strategy document, its objectives and its action plans.

Following this the public have an important ongoing role to play in helping reduce the risks from flooding within the region. In addition to being aware of the risks, this includes:

- reporting flooding incidents to the appropriate Risk Management Authority (see Section 3.4.1);
- taking action to reduce flooding to their property or land (see Section 3.4.2);
- cooperating with Risk Management Authorities where appropriate to help improve understanding about the mechanisms of flooding and help develop effective approaches to manage risks, and;
- supporting the management of local risks through good land use practices, maintaining any privately owned flood risk structures or assets, and maintaining watercourses where there are Riparian Owner responsibilities (see Section 3.4.3).

2
Strategy Objectives

It is helpful to describe local flood risk management in Bath & North East Somerset in three phases, which are illustrated in Figure 2-1. The majority of actions arising from the Local Flood Risk Management Strategy are related to managing the risks of local flooding, although there are some actions to support the planning for, warning of, and response to, flooding. The warning and responding to flooding incidents is primarily undertaken by the emergency planning authority[5] with the support of the emergency services, including Bristol & Avon Fire and Rescue and the Police.

A series of objectives have been defined to help structure and govern the implementation of the Local Flood Risk Management Strategy. These objectives are to:

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

Figure 2-1 identifies how each of these objectives are linked to the three phases of flood risk management. Objective 2 is an over-arching objective which needs to be promoted during all phases of local flood risk management. It is vital that local communities are aware of local flood risks, know how to prepare and respond to flooding, are empowered to take ownership of local flood risk issues, and understand the roles and responsibilities of Risk Management Authorities.

The measures proposed to help achieve these objectives are detailed in the action plan provided in Section 5, and an explanation of the principles of each objective are contained below /overleaf.

5 This role is undertaken by the Emergency Planning and Business Continuity department within Bath & North East Somerset Council.

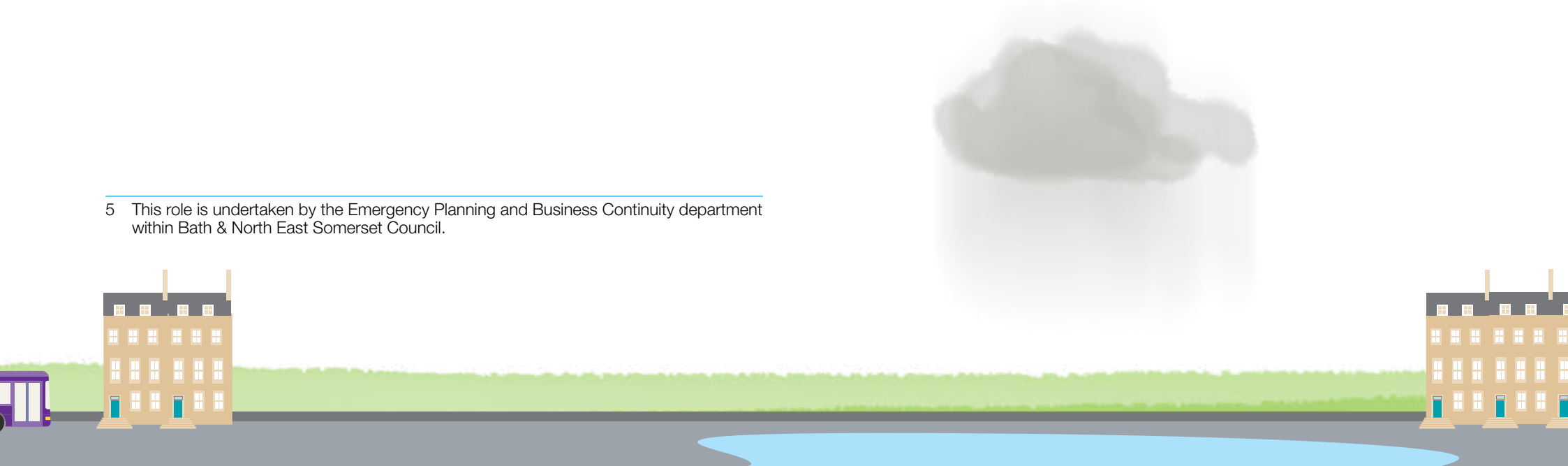


Figure 2-1 Three phases of flood risk management in Bath & North East Somerset

Emergency response undertaken by the emergency planning authority and emergency service (Note: this is outside of the remit of the LFRMS

Warn and respond to flooding

- Promote community awareness and build capability for appropriate action (Objective 2)
- Improve flood preparedness, warning and ability to recover (Objective 5)

Manage the risks

- Improve understanding of local flood risk (Objective 1)
- Promote community awareness and build capability for appropriate action (Objective 2)
- Manage local flood risk through capital and maintenance investment (Objective 3)
- Prevent inappropriate development that creates or increases flood risk (Objective 4)

Plan for flooding

- Promote community awareness and build capability for appropriate action (Objective 2)
- Improve flood preparedness, warning and ability to recover (Objective 5)

Objectives

1

Improve our understanding of local flood risk

To date a lot of work has been done by the Council and partners to improve understanding of flood risk in the Bath & North East Somerset area. This has included recording where and when flooding occurs, and assessments to ensure that new development considers flood risk. For further details refer to the:

- Bath & North East Somerset Preliminary Flood Risk Assessment;
- regional Surface Water Management Plan;
- and the Chew Magna and Chew Stoke Flood Section 19 Flood Investigation Reports (as required under the Flood and Water Management Act (2010)[6].

These studies and investigations have partially helped to meet this objective, but there are additional measures outlined within the Strategy Action Plan in Section 5 which the Lead Local Flood Authority have developed as part of the Local Flood Risk Management Strategy.

2

Promote community awareness and build capability for appropriate action

Communities, individuals and businesses have an important role to play in flood risk management, understanding what the risks are, and taking an active role in managing these risks. Further details on this essential role are discussed in Section 3.5. However, as part of the role as the Lead Local Flood Authority there is also a need to help ensure that useful information is provided to communities of Bath & North East Somerset.

3

Manage local flood risk through capital and maintenance investment

Although the Lead Local Flood Authority has responsibility for taking a leading role in managing local flood risk, it is not possible or appropriate for the Lead Local Flood Authority to try to manage all flood risk in isolation. To ensure that flood risk is managed over the long term the Lead Local Flood Authority will engage with partners to develop long term, joined up approaches. Through our role as the Lead Local Flood Authority we will also prioritise our resources based on our improved understanding of where the risks are greatest.

6 Available on the Bath & North East Somerset website at: http://www.bathnes.gov.uk/services/environment/land-drainage

4

Prevent inappropriate development that creates or increases flood risk

The Council holds roles as both the Local Planning Authority and Lead Local Flood Authority, and as such have responsibility to ensure that new development properly considers drainage and flood risk as part of the planning application stage. In addition, the Lead Local Flood Authority is a statutory consultee on all major planning applications[7]. The Lead Local Flood Authority also offers technical advice on local flood risk and drainage issues in Bath & North East Somerset, and encourage pre-planning discussion to better inform proposed drainage strategies and minimise local flood risk.

To support this the Bath & North East Somerset Placemaking Plan incorporates a Sustainable Drainage System policy, and links with the Core Strategy Key Policy CP5 Flood Risk Management and CP7 Green Infrastructure, to ensure that all new sites are expected to incorporate sustainable drainage systems to reduce surface water runoff and minimise its contribution to flooding.

Local guidance in the form of the West of England Sustainable Drainage Developer Guide has also been recently published. This provides standards and guidance for developers, planners, designers and consultants on the requirements for design, approval and adoption of SuDS in the West of England and Somerset. The guidance provides information on the planning, design and delivery of attractive, high quality and well integrated SuDS schemes, promotes the need for early consideration of Sustainable Drainage Systems, and introduces the use of a "proof of concept" process to gain agreement in principle at an early stage from the Local Planning Authority.

As part of the Local Flood Risk Management Strategy a number of actions have been identified to help strengthen the information available and ensure that inappropriate development is prevented. This is described in Section 5.

7 Major development is defined in Article 2(1) of the Town and Country Planning (Development Management Procedure) (England) Order 2010, http://www.legislation.gov.uk/uksi/2010/2184/pdfs/uksi_20102184_en.pdf

5

Improve flood preparedness, warning and ability to recover

The removal of all flood risk is not feasible and as such it is important to predict when flooding is likely to occur, warn people when there is a risk to themselves or their properties, and thereafter help people to recover from the adverse effects of flooding.

The Council is already responsible for planning and responding to flood emergencies as a Category 1 responder under the Civil Contingencies Act 2004, and works closely with the Bristol & Avon Fire and Rescue Service[8], the Police Service and the Environment Agency to do this.

As part of the Local Flood Risk Management Strategy the Lead Local Flood Authority will develop a number of actions to ensure there is improved awareness about flood prediction, warning and how to recovery following a flood event. This is outlined further in Section 5.

8 The Fire and Rescue Service are not a Risk Management Authority and do not have any specific mandated responsibilities around flood emergencies. However, as part of the service they offer, they are often involved.

Section 3
Roles and Responsibilities

3.1 Partnership Working

The Lead Local Flood Authority have established a number of working groups which enable partnership working with other organisations and Risk Management Authorities (explained in Section 3.3). These include the Strategic Flood Board and Operational Flood Working Group, which hold regular meetings. The Strategic Flood Board provides oversight and partnership working for flood risk management in Bath & North East Somerset. The purpose of the Operational Flood Working Group is to discuss and agree ways to manage flood risk from local sources.

The Lead Local Flood Authority also attend meetings with the South West Flood Risk Managers and West of England Flood Risk Working Groups which aids communication with other Lead Local Flood Authorities in the South West of England.

The established lines of communication between the various groups is shown in Figure 3-1.

Everybody in the Bath & North East Somerset area has the potential to play a role in a partnership working arrangement, and getting the right mix of people involved is key to the success or failure of a flood improvement project. The Lead Local Flood Authority will facilitate the development of further partnership working where required, and when resources allow. In particular the Lead Local Flood Authority will look to work with local communities through the Local Flood Representatives. The Local Flood Representatives act as a point of contact between local communities and the Lead Local Flood Authority. They provide an important communication link between residents or communities and other flood risk management stakeholders on issues regarding local flooding.

3.2 Who are the Risk Management Authorities

Certain organisations were defined in the Flood and Water Management Act (2010) as Risk Management Authorities and given specific responsibilities around flooding. This includes both new responsibilities from the Flood and Water Management Act (2010), and longstanding ones from previous legislation such as the Highways Act (1980), and the Land Drainage Act (1991).

Within the Bath & North East Somerset region Risk Management Authorities include:

- Bath & North East Somerset Council;
- the Environment Agency;
- Highways England;
- Bristol Water; and
- Wessex Water.

Table 3-1 provides an overview of these Risk Management Authorities and their responsibilities for managing flood risk within the region.

Figure 3-1 Showing how Bath & North East Somerset Council as the Lead Local Flood Authority communicate with other partners who have roles and responsibilities for flood risk management. Risk Management Authorities have been defined in this diagram with (RMA) assigned next to their organisations tittle.

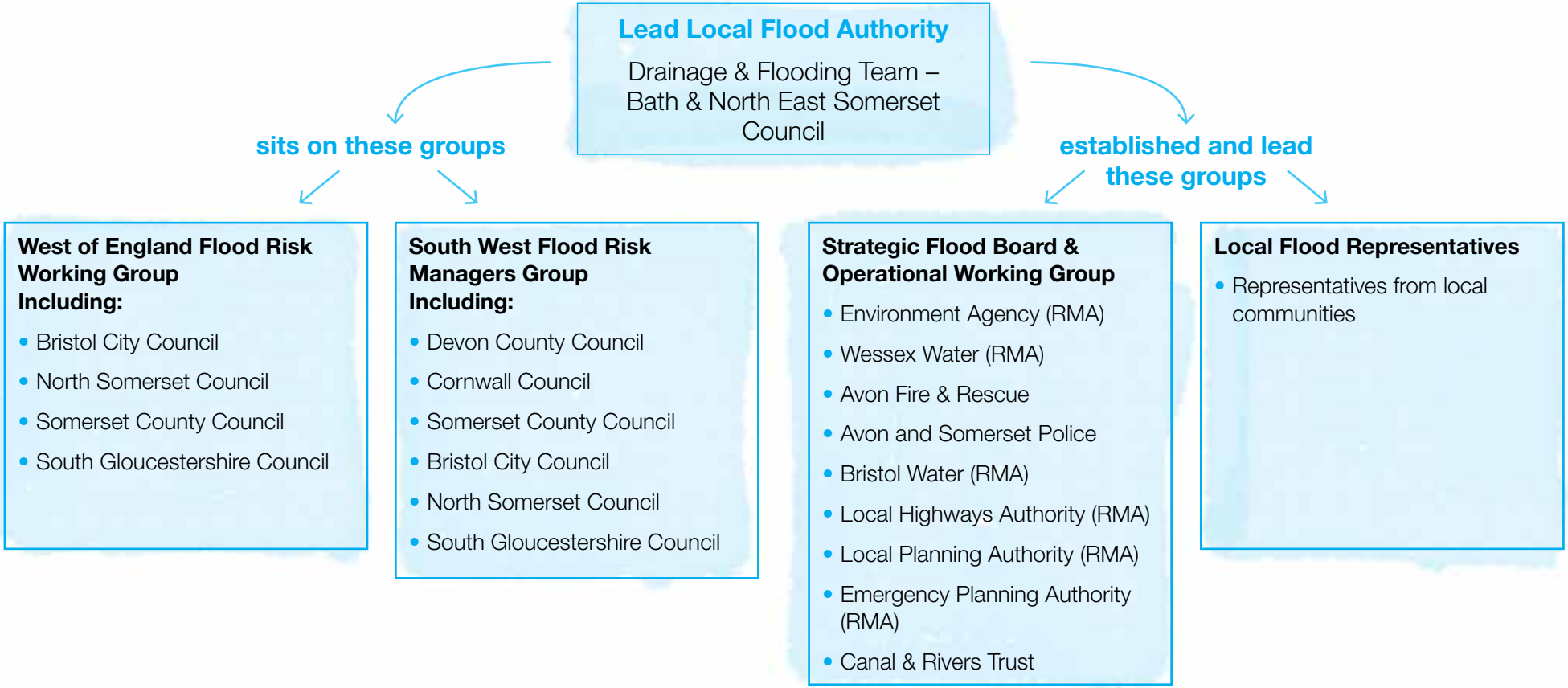
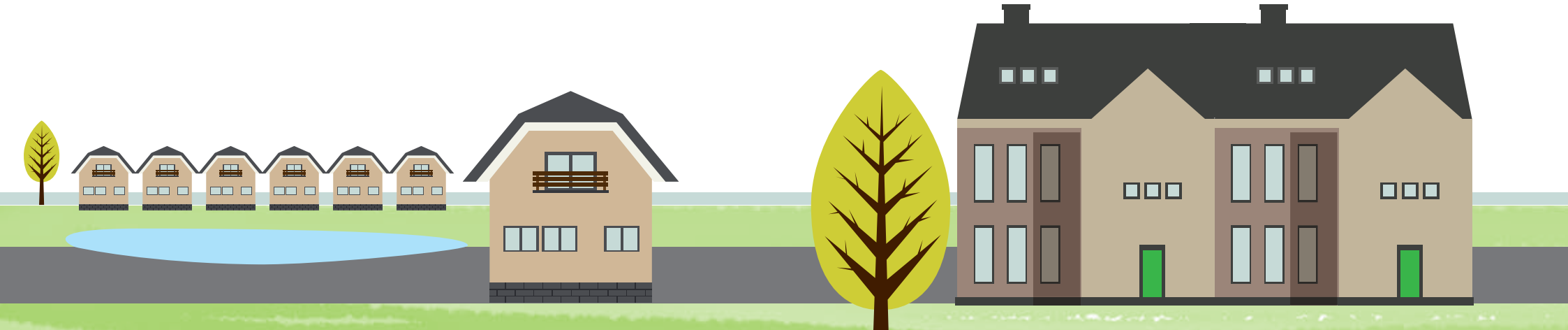


Table 3-1 Overview of responsibility for flood risk management within Bath & North East Somerset

	Responsible Risk Management Authority				
Flood Source	**Environment Agency**	**Bath & North East Somerset Council**	**Bristol Water**	**Wessex Water**	**Highways England**
Main River	✓				
The Sea	✓				
Surface Water		✓			
Surface Water (on or coming from the highway)		✓			✓
Sewer Flooding				✓	
Ordinary Watercourse		✓			
Ground Water		✓			
Reservoirs	✓		✓	✓	
Burst Water Main			✓	✓	

A summary of the key roles and responsibilities are provided in subsequent sections. Full details of all roles and responsibilities are included in Appendix C.



3.3 Roles of Risk Management Authorities

All of the Risk Management Authorities in Bath & North East Somerset have the following general duties and powers:

- duty to co-operate with other Risk Management Authorities in the exercise of their flood and coastal erosion risk management functions, including sharing flood risk management data;
- duty to have regard for national and local flood and coastal erosion risk management strategies, and;
- power to take on flood and coastal erosion functions from another Risk Management Authorities when agreed by both sides (except those in relation to the function of the Lead Local Flood Authority or the Environment Agency).

The specific roles of each Risk Management Authority are explained in the following sections.

3.3.1 Bath & North East Somerset Council

The main responsibilities of the Council associated with flood risk management are as the:

- Lead Local Flood Authority;
- Local Highways Authority;
- Local Planning Authority, and;
- Emergency Planning Authority.

The Council has an important role to play as the strategic leader for local flood risk management. This includes developing a Local Flood Risk Management Strategy, ensuring all Risk Management Authorities are aware of their responsibilities, and co-operate with each other through the Strategic Flood Board and the Operational Flood Working Group. Some of our functions are described below.

As the **Lead Local Flood Authority** the Council are responsible for:

- development, maintenance, application and monitoring of the Bath & North East Somerset Local Flood Risk Management Strategy;
- recording flood incidents, investigating and publishing reports on flooding incidents as appropriate[9];
- managing an Asset Register of structures or features which have a significant (as defined in this Section 3.3.2) effect on flood risk in the region;
- Ordinary Watercourse consenting and enforcement;
- designation of assets (structures and features) that affect flooding, and;
- statutory consultee for major planning applications with surface water implications.

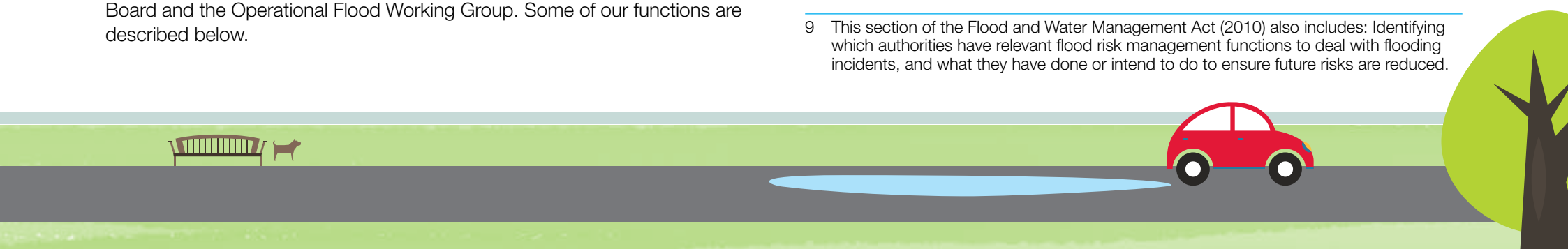
As the **Local Highways Authority** the Council are also responsible for:

- the provision and management of highway drainage under the Highways Act (1980) where these are not managed by Highways England. It should be noted that the majority of roadside ditches are the responsibility of adjacent landowners, unless the ditch was constructed by the highways authority solely for the purpose of draining the highway.

As the **Local Planning Authority** the Council are responsible for:

- preparing a Local Plan for development;
- considering flood risk assessments submitted in support of applications;
- determination of planning applications, giving consideration for flood risk within the region, and;
- working closely with the Lead Local Flood Authority to ensure that planning applications take adequate account of drainage requirements.

9 This section of the Flood and Water Management Act (2010) also includes: Identifying which authorities have relevant flood risk management functions to deal with flooding incidents, and what they have done or intend to do to ensure future risks are reduced.



As the **Emergency Planning Authority** the Council has responsibility for:

- planning for and responding to flood emergencies as a Category 1 responder under the Civil Contingencies Act 2004, and;
- working closely with the Bristol & Avon Fire and Rescue Service[10] and the Police Service to do this.

3.3.2 Existing activities

Specific activities the Council are already undertaking to manage local flood risk are outlined below.

Highway drainage maintenance

As outlined in Section 3.3.1 the Local Highways Authority have responsibilities under the Highways Act (1980). This includes ensuring that highway drainage systems are maintained and that blockages on the highway are cleared, where reasonably practicable.

Ordinary Watercourse maintenance

Regular maintenance works undertaken on Ordinary Watercourses helps ensure the free flow of water in these watercourses. This is necessary to alleviate flooding and to assist land drainage. The Lead Local Flood Authority have identified 37 reaches of Ordinary Watercourses where clearance is required to reduce the risk of property flooding. These reaches are maintained on an annual basis. Furthermore, the Lead Local Flood Authority undertake reactive maintenance works on trash screens to reduce the risk of blockage using permissive powers under the Land Drainage Act (1991).

10 The Fire and Rescue Service are not a Risk Management Authority and do not have any specific mandated responsibilities around flood emergencies. However, as part of the service they offer, they are often involved.

Maintenance of an asset register

As highlighted in Section 3.3.1, the Lead Local Flood Authority are required to establish and maintain a register of structures and features which are considered to have a significant impact on flood risk, under Section 21 of the Flood and Water Management Act (2010). This register holds a record of information about each of those structures or features, including information about ownership and condition. The flood risk asset register is a live database, and new structures and features are added as information becomes available.

The purpose of the asset register is to:

- inform the public of key flooding assets in their area;
- inform the Bath & North East Somerset Local Flood Risk Management Strategy;
- influence the maintenance regime of the assets, and;
- assist investigations of significant flood events ('significant' being as defined below).

The register is published on the the Council website and can currently be found under the following link: http://isharemaps.bathnes.gov.uk/myBathNES.aspx?MapSource=BathNES/Lead Local Flood Authority&TAB=maps.

Emergency planning and response

As highlighted in Section 3.3.1, as the Emergency Planning Authority the Council has a responsibility for planning for and responding to emergencies; including flood emergencies.

During and after an emergency the Emergency Planning Authority:

- coordinate emergency support within their own functions;
- work with the other Category 1 and 2 responders as part of the multi-agency response;
- coordinate emergency support from the voluntary sector;

- liaise with central and regional government departments;
- liaise with essential service providers;
- open rest centres;
- manage the local transport and traffic networks;
- mobilise trained emergency social workers;
- provide emergency assistance;
- deal with environmental health issues, such as contamination and pollution;
- coordinate the recovery process;
- manage public health issues;
- provide advice and management of public health;
- provide support and advice to individuals, and;
- assist with business continuity.

Land Drainage Consent

Under Schedule 2 of the Flood and Water Management Act (2010) the Lead Local Flood Authority has a duty to consent works and a power to undertake enforcement on ordinary watercourses under changes to the Land Drainage Act 1991 (sections 23, 24 and 25). The duty to consent enables the Lead Local Flood Authority to approve or reject applications for works on Ordinary Watercourses depending on the impact of the proposed works on flood risk. As part of this role the Lead Local Flood Authority review proposals from applicants who intend to carry out works (whether temporary or permanent) that may construct or alter any mill, dam, weir, or culvert which is likely to affect the water flow on an Ordinary Watercourse.

The reason for this consenting process is to ensure that any works do not endanger life or property by increasing the risk of flooding or cause harm to the water environment.

Investigating flooding

The Lead Local Flood Authority have a duty to record and investigate significant flooding events under Section 19 of the Flood and Water Management Act (2010). There is no national definition of significant and it is up to the Lead Local Flood Authority to decide what flooding incidents are locally important to them and are worth of recording and investigating. Any of the following would trigger an investigation and be classified as significant:

- five or more properties at an urban location experience internal flooding;
- two or more properties at a rural location experience internal property flooding;
- where the event resulted in a loss of life, or;
- where critical infrastructure (e.g. power station, pump station, electricity supply, critical transport route) was affected by flooding for a significant period of time.

The investigations will identify which Risk Management Authority is responsible for the flood incident. The relevant Risk Management Authority will then be required to prepare a report detailing the cause of flooding, the consequences of the flood event and the actions taken to deal with the event during and after the flooding, in accordance with the requirements of Section 19 of the Flood and Water Management Act (2010). Investigations will involve consultation with the relevant Risk Management Authorities, landowners and private organisations involved, all of whom we will work with to ensure cooperation. These reports will be important tools that will bring all useful information together, providing a better picture and understanding of situations, outlining possible causes of flooding and identifying potential long-term solutions.

These reports will also include further recommendations for future flood risk management actions that could be undertaken to address and resolve flooding. Reports will be available to anyone on request within three months of an incident being reported to the Lead Local Flood Authority. However, there are cases where this timeframe will be extended (e.g. if widespread flooding occurred across the area).

3.3.3 The Environment Agency

The Environment Agency is required to publish a National Flood and Coastal Erosion Risk Management Strategy which provides a national framework for all sources of flooding and coastal erosion. Similar to the Local Flood Risk Management Strategy, it defines roles and responsibilities, and sets out some guiding principles for flood risk management. The Bath & North East Somerset Local Flood Risk Management Strategy must be consistent with this national strategy.

The Environment Agency is also responsible for:

- having a strategic overview of flood risk from all sources;
- managing flood risk from Main Rivers through preparation of plans and policies (e.g. Catchment Flood Management Plans and Flood Risk Management Plans), and delivery of flood risk management schemes;
- managing coastal erosion, but as Bath & North East Somerset does not contain any stretches of coastline this is not relevant for the management of flood risks in Bath & North Somerset;
- providing flood warnings to the public, protecting and improving the environment, and promoting sustainable development;
- flood defence consenting;
- carrying out flood defence works on Main Rivers, but the overall responsibility for maintenance lies with the Riparian Owner[11];
- bringing forward flood defence schemes through the Regional Flood and Coastal Committees;
- working with Lead Local Flood Authorities and local communities to shape schemes which respond to local priorities;
- establishing and maintaining a register of reservoirs, and making this information available to the public;
- acting as Enforcement Authority for reservoirs under their jurisdiction (this is currently reservoirs that are greater than 25,000m^3, but soon planned to reduce to 10,000m^3), and;
- using their role as the Enforcement Authority for reservoirs under their jurisdiction to enforce the Reservoirs Act 1975 and ensures flood plans are produced for specified reservoirs. It should be noted that responsibility for carrying out work to manage reservoir safety lies with the reservoir owner/operator who should produce the flood plans.

3.3.4 Wessex Water

Wessex Water, as a water and sewerage company, has the following responsibilities related to flood risk management:

- responding to flooding incidents involving their assets;
- producing reports of the flood incidents as deemed necessary under Section 19 of the Flood and Water Management Act (2010);
- undertaking capacity improvements to alleviate sewer flooding problems where it is economically viable to do so, and in accordance with their business plan and performance commitments;
- providing, maintaining and operating public sewers systems and works for the purpose of effectively draining an area including adoption of new systems, and;
- have a role to play in integrated catchment management.

11 Riparian Owners are those who own land or property next to a river, stream or ditch. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/403435/LIT_7114.pdf

It should be noted that although a burst water main can also cause a property or road to flood, this is excluded from the definition of flooding in the Flood and Water Management Act (2010).

3.3.5 Bristol Water

Bristol Water are a water supply company only, and as such they do not have any responsibility for sewer flooding. Bristol Water are however responsible for:

- management of water impounding reservoirs, and have interests in;
- managing flooding caused by burst water mains within their area[12], and;.
- integrated catchment management.

3.3.6 Highways England (formally the Highways Agency)

Highways England are responsible for:

- managing the quantity and quality of road runoff that is collected within the Highways England network.

3.4 Roles of Stakeholders and the Public

As highlighted in Section 1.8, all residents have a role to play in helping to manage flooding. Further details regarding these roles is outlined in Section 3.5.

3.4.1 Reporting Flooding

Council Connect, and/or a Local Flood Representative, should be contacted:

- where flooding has led to internal property flooding;
- where there is a maintenance issue with a watercourse that may result in flooding of properties. For instance overgrown vegetation impeding flows, or other restrictions or blockages such as fallen trees or trash that could result in property flooding;
- maintenance issues with watercourse structures that may result in flooding of properties (e.g. blocked culverts or trash screens);
- where there is actual evidence of flooding from an Ordinary Watercourse;
- where surface water runoff from land may be flooding roads or property, or;
- where evidence of groundwater flooding is observed.

The more information that can be provided the better, with photos being particularly useful. Council Connect, or a Local Flood Representative, will then pass the information to the Lead Local Flood Authority for them to consider and escalate as appropriate. Issues may be discussed at an Operational Flood Working Group meeting or passed to the relevant Risk Management Authority.

Other types of flooding need to be reported directly to other authorities. Table 3-2 provides further details on who and how to contact different authorities depending on the situation. More advice about what to do during a flood is available on the Gov.uk website: https://www.gov.uk/prepare-for-a-flood/get-help-during-a-flood.

12 It should be noted that flooding from burst water mains is specifically excluded from the Flood and Water Management Act (2010).

Table 3-2 Reporting flooding – who to contact and how

Issue	Who to contact and how
Imminent or current property flooding	Environment Agency or the Emergency Services. If a person's home is flooding they should call the Environment Agency's Floodline 0345 988 1188 for flooding advice. If they feel at risk or in danger then they should call 999.
Surface water (including blocked gulleys, water ponding on highways etc), groundwater or Ordinary Watercourse flooding.	Council Connect service: Online forms: www.bathnes.gov.uk/reportit Email: councilconnect@bathnes.gov.uk Twitter: @ccbathnes or Telephone: 01225 39 40 41 Text (SMS): 07797 806 545
Burst water main or sewer flooding	Bristol Water (0800 801 011) for mains supply in Bath & North East Somerset (except for Bath area) Wessex Water (0345 600 4 600) for sewers anywhere in Bath & North East Somerset and mains supply in Bath area.
Bank erosion	This is a Riparian Owner matter and should be taken up with the relevant land owners.
Private drainage matters	The appropriate land/asset owners.

3.4.2 Preparing for flooding

Even where drainage and flood risk systems are functioning in accordance with their design standards there will always be situations when rainfall exceeds the capacity of these systems and flooding will occur. Consequently it is important that householders and businesses, whose homes are at risk of flooding, to take steps to ensure that their house is protected and ensure they do not increase the risk of flooding to others. Table 3-3 provides information on the steps home and business owners should take to prepare themselves for flooding.

There may be opportunities for support with helping to prepare properties and premises against flooding, but this will be dependent on individual circumstances. Further details on potential financial support is outlined in Section 6 and Appendix D.

Table 3-3 How to prepare for flooding

Steps to prepare for flooding	Further information on how to prepare for flooding
Checking whether your household is at risk from flooding.	All households in areas at risk from coastal or Main River flooding (classified as Flood Zones 2 and 3) should have been contacted notifying them of this and, unless they have chosen to opt-out, will receive flood warnings from the Environment Agency when the risk of river or coastal flooding is high. Information about the risk from river and coastal flooding can be found on the Environment Agency website under the 'Risk of Flooding from Rivers and Sea' interactive map (which is currently available at http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?lang=_e&topic=floodmap&layer=default&scale=2&x=357683&y=355134#x=357683&y=355134&scale=2). Information about surface water flood risk is provided in the regional Surface Water Management Plan and the Environment Agency website under the 'Risk of Flooding from Surface Water' map (which is currently available at http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?topic=ufmfsw#x=357683&y=355134&scale=2)
Ensuring that preparations have been made in the event of a flood.	The Emergency Planning Authority recommend that Parishes at risk from flooding create a community flood plan and to assist this further guidance has been produced and is available on the Bath & North East Somerset website at http://www.bathnes.gov.uk/services/planning-and-building-control/planning/planning-advice-and-guidance/flood-emergency-plan. The Environment Agency also provides information on what to do to prepare a household for flooding and what to do during a flood: https://www.gov.uk/prepare-for-a-flood. This includes how to make a flood plan which will help you decide what practical actions to take before and after a flood.
Taking measures to ensure that your house is protected, or the impacts will be reduced, through use of property level protection.	Further details on potential measures can be found in a pamphlet which has been developed by the Environment Agency which is currently available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/292943/geho1009brdl-e-e.pdf. Another valuable document for householders to refer to is The National Flood Forum's Blue Pages Directory which provides information and advice on what products are available to help protect your home or business against flooding. It can be found on the Blue Pages website which is currently available at http://www.bluepages.org.uk.

3.4.3 Role of property owners next to a watercourse

If a property is adjacent to or backs onto a river, stream or other watercourse then it is likely that the land owner will be the Riparian Owner and as such be held to own the land up to the centre of the watercourse.

Riparian Owners have a right to protect their property from flooding and erosion, but will need to discuss the method of doing this with the Lead Local Flood Authority if the watercourse is an Ordinary Watercourse, or the Environment Agency if the watercourse is classified as a Main River (as outlined in Section 4.4.3). Riparian Owners also have responsibility for maintaining the bed and banks of the watercourse and ensuring there is no obstruction, or diversion to the flow of the watercourse.

If you are a riparian owner there is useful information in the Environment Agency's document 'Living on the Edge' **https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/454562/LIT_7114.pdf**

3.5 Responsibilities for surface water runoff from neighbouring property and land

All property and land owners are encouraged to adopt good land use practices and adequately maintain their drainage systems to avoid surface water runoff from causing problems for neighboring property and land.

However, under common law, land or property owners are responsible for the drainage of their own land. Higher land owners have the right to make natural discharge to lower ground, but the lower landowner does not have a duty to accept that runoff.

A dispute between neighbours over problems resulting from surface water runoff is a civil matter and the Law of Tort is applicable.

3.6 Responsibility for surface water runoff onto the public highway

Drainage of the highways, and maintenance of highway drainage features are the responsibility of the Local Highways Authority.

Under Section 163 of the Highways Act (1980) the Local Highways Authority have powers to issue notice to adjoining occupiers to construct, and thereafter maintain, "channels, gutters or downpipes as may be necessary to prevent:

- water from the roof or any other part of the premises falling upon persons using the highway, or;
- so far as is reasonably practicable, surface water from the premises flowing onto, or over, the footway of the highway.[13]

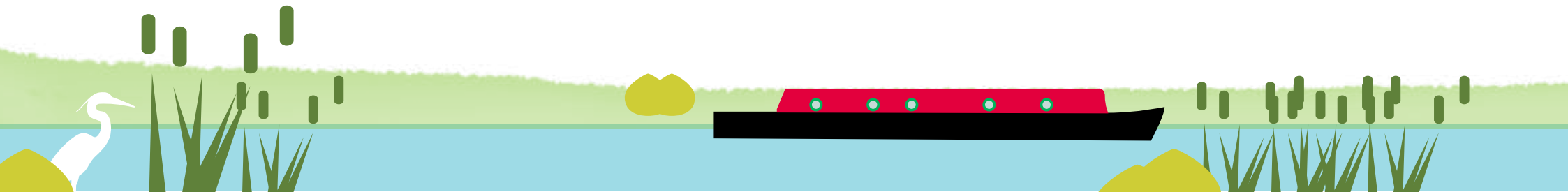
3.7 Who else has a role

Utility and infrastructure providers such as Network Rail, energy companies and telecommunication companies are not Risk Management Authorities, but have a crucial role to play in flood risk management. Their assets can be important consideration in planning for flooding, and although they already maintain plans for the future development and maintenance of the services they provide, it is important that they factor in flood risk management issues into this planning process.

Utility and infrastructure providers may therefore wish to invest time and resources into developing and delivering aspects of the Local Flood Risk Management Strategy in order to protect their assets and customers.

13 Highways Act (1980), http://www.legislation.gov.uk/ukpga/1980/66

Section 4
Local Flood Risk in Bath & North East Somerset



This section provides an overview of the current, and potential future flood risk in Bath & North East Somerset. It draws primarily on information contained within the regional Surface Water Management Plan, but also the Preliminary Flood Risk Assessment produced in 2011[14]. This section should therefore be read in conjunction with the regional Surface Water Management Plan available at: http://www.bathnes.gov.uk/services/environment/land-drainage.

4.1 What is classed as flooding?

Flooding occurs when:

- a watercourse overtops its banks;
- there is exceptional rainfall, and the capacity of drainage systems is exceeded;
- groundwater rises above the surface;
- drainage systems are not well maintained;
- there are blockages/collapses in the drainage network, or;
- there is increased runoff from land or hard standing areas.

A burst water main can also cause a property or road to flood, but this is excluded from the definition of flooding in the Flood and Water Management Act (2010). In addition the Flood and Water Management Act (2010) also excludes a flood from "any part of a sewerage systems, unless wholly or partly caused by an increase in the volume of rainwater (including snow and other precipitation) entering or otherwise affecting the system".

The types of flooding which affect communities in Bath & North East Somerset are outlined in Section 4.4 and 4.5.

4.2 What is flood risk?

Flood risk is a combination of the probability and consequence of flooding from any, or all, sources. High flood risk can endanger lives, damage buildings and infrastructure, historic structures, archaeology and settlements.

Flood risk means risk from all sources of flooding. This includes from:

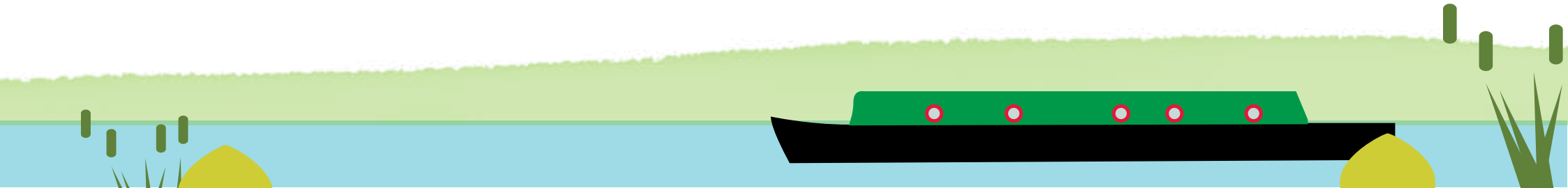
- rivers;
- the sea;
- directly from rainfall on the ground surface (surface water runoff);
- rising groundwater;
- overwhelmed sewers and drainage systems;
- from reservoirs;
- canals;
- lakes, or;
- other artificial sources[15].

4.3 What is flood risk management?

The ultimate aim of flood risk management is to reduce the likelihood and/or impact of potential flood risks, but there are a number of stages which are needed in order to do this effectively. For example without understanding the cause of flooding properly, the solution to reduce flood risk would not be as effective.

14 http://www.bathnes.gov.uk/sites/default/files/sitedocuments/Planning-and-Building-Control/Planning-Policy/Evidence-Base/Flood-Risk/PreliminaryFloodRiskAssessment.pdf

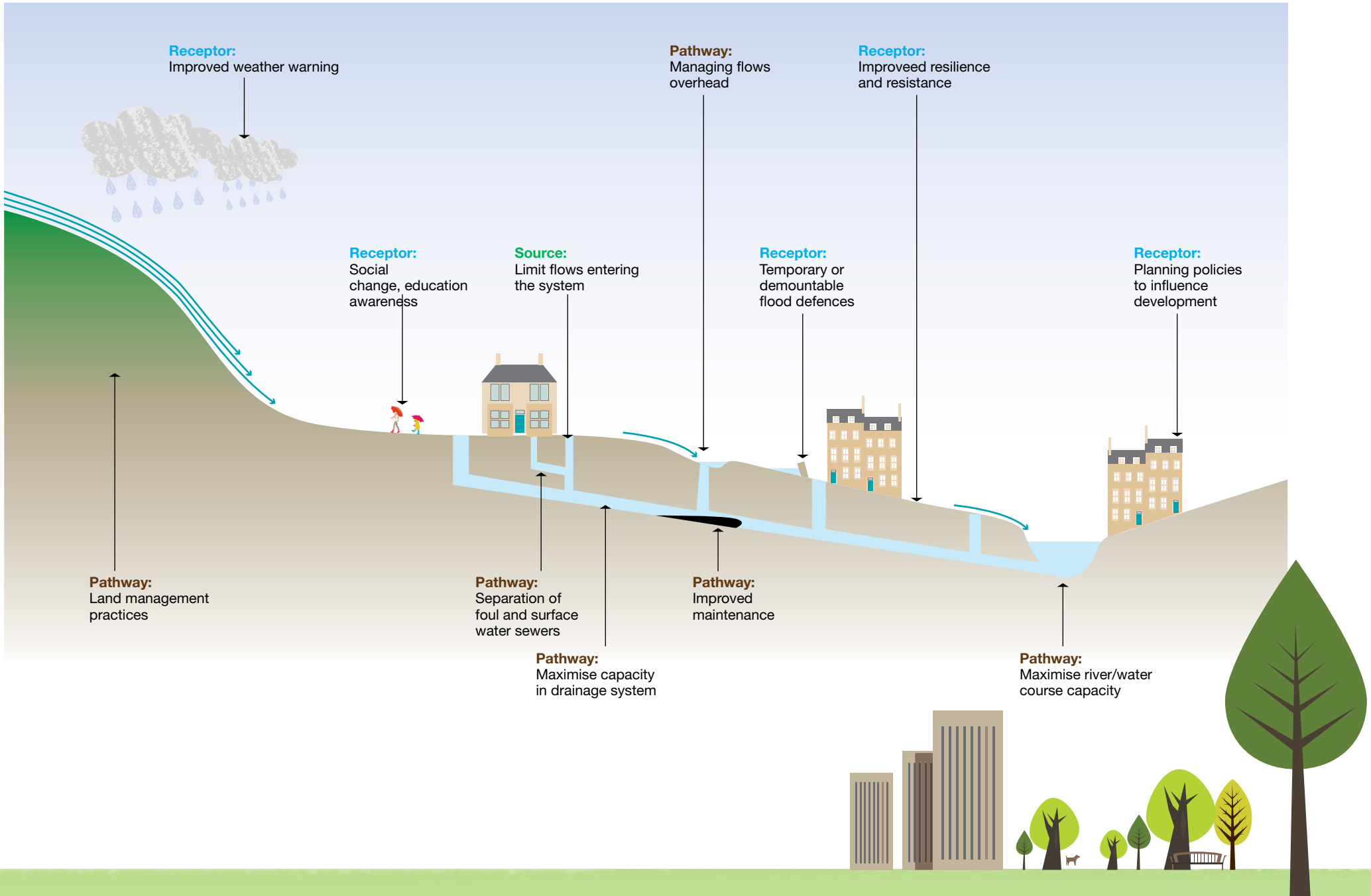
15 Extracted from: Communities for Local Government (2012), Technical Guidance to the National Planning Policy Framework, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6000/2115548.pdf



Flood risk management measures can be broken down into broad themes as detailed below and in figure 4-1

Measure	Description	Typical examples
Investigations	Aim to better understand the cause of flooding to improve the confidence in decision-making.	• studies (e.g. Surface Water Management Plan); • site walkovers; • surveys, or; • drainage and overland modelling studies.
Source control	Source control measures aim to control flood water at their source by increasing storage, reducing the rate of runoff or increasing the volume of water which soaks into the ground. Sustainable drainage systems are often an effective means to implement source control. Sustainable drainage systems encompass a variety of measures such as permeable paving which allows more water to soak into the ground than traditional impermeable road and path surfaces. Other sustainable drainage measures may include introducing ponds and wetlands that can hold flood water, or swales and detention basins which slow the movement of water and reduce the volume of runoff. Source control measures can also integrate with re-use of water through grey-water recycling or rainwater harvesting.	• introducing sustainable drainage systems / green infrastructure / rainwater harvesting; • improving land management practices, or; • intercepting and diverting pluvial runoff.
Pathway	Pathway measures aim to effectively manage the movement of flood water through both natural and manmade drainage systems. Measures may be structural, for example involving the development of new drainage systems, or separating foul and surface water sewers. They may be non-structural, for example encouraging land management practices which reduce runoff. Maintenance of existing drainage infrastructure is also an important aspect to managing flood risk. It can reduce flood risk with minimal capital investment, freeing up funds for measures elsewhere.	• storage above or below ground; • management of exceedance flows (e.g. re-profiling road); • increasing capacity of urban drainage network (sewer or highway drainage); • increasing capacity of drains/watercourses; • raising/creating flood defences; • removing culverted sections of watercourses and replace with open channels; • enhancing maintenance of gullies / drainage network; • enhancing maintenance of watercourses/culverts, or;
Receptor level	Measures aim to reduce the likelihood and/ or impact of flooding on people, property and environment.	• introducing individual property level protection / resilience measures; • improving flood warning • planning policies to prevent inappropriate development; • raising awareness and education, and; • promoting community level resilience.

Figure 4-1 Flood risk management (Source Control, Pathway, Receptor)



4.4 Records of local flooding in Bath & North East Somerset

One of the purposes of the regional Surface Water Management Plan was to collate information and map recent and relevant flood incidents within Bath & North East Somerset, to help inform what the local flood risk issues are within the region.

Recorded flooding incidents in the regional Surface Water Management Plan were based on the information supplied by the partners and stakeholders involved in the management of surface water, Main Rivers, Ordinary Watercourses, groundwater and sewer flooding. This included data from Bath & North East Somerset Council, the Environment Agency, Wessex Water, and the Canal and River Trust.

Based on this, over 990 recorded flood incidents of recent and relevant flooding were recorded in the region between 2009 and 2014. Records of flooding prior to 2009 were removed to prevent any misrepresentation of recorded flood incidents which may now have been actioned. Further details on the methodology used to analyse flooding incidents is detailed in the regional Surface Water Management Plan report.

These records were used to develop a Flood Incident Register and Interactive Maps of Local Flood Incidents. These outputs are available in the regional Surface Water Management Plan report. As demonstrated on the Interactive Maps of Local Flood Incidents, flooding occurs across the region, although there are notable clusters of flooding in Bath, Keynsham, Whitchurch, Chew Magna, Chew Stoke, West Harptree, Midsomer Norton and Radstock.

4.5 Potential flood risks in Bath & North East Somerset

The information in Sections 4.5.1 to 4.5.6 describe the nature of flood risk in Bath & North East Somerset from a range of sources. Information on local flooding is summarised in Table 4 2.

4.5.1 Flood risk from surface water

Surface water flooding, also referred to as pluvial flooding or flash flooding, is “rainwater, including snow and other precipitation, which is on the surface of the ground and has not entered a watercourse, drainage system or public sewer”.[16] When this happens the water either ponds on the surface or runs over it and this can potentially lead to flooding.

In 2014 the Environment Agency produced the Updated Flood Map for Surface Water to identify areas that were vulnerable to flooding from surface water. The maps have been published online and is currently available at http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?lang=_e&topic=ufmfsw&layer=default&scale=5&x=387426&y=172732#x=387426&y=172732&scale=5. The regional Surface Water Management Plan was completed in July 2015 using the updated data from the Environment Agency to better understand the risk of flooding from surface water. For this regional Surface Water Management Plan a count of the number of residential properties, critical infrastructure and emergency service assets at risk of flooding was undertaken, for all of the mapped return periods in the Updated Flood Map for Surface Water, which is shown in Table 4-1.

16 Extract from: Department for Environment, Food and Rural Affairs and the Environment Agency (2011), Understanding the risks, empowering communities, building resilience: the national flood and coastal erosion risk management strategy for England, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228898/9780108510366.pdf

Table 4-1 Estimated number of receptors at risk from surface water flooding (extracted from regional Surface Water Management Plan)

Return Period	Residential Properties	Critical Infrastructure	Emergency Responders
1 in 30 year	302	11	0
1 in 100 year	737	24	0
1 in 1000 year	3039	77	2

The Lead Local Flood Authority has also completed a number of other studies looking into the effect of surface water flooding within the region. These include the following:

- a Preliminary Flood Risk Assessment;
- Surface Water Assessment for Weston (Bath), and;
- Section 19 flood investigations for Chew Stoke, Chew Magna and Broadmead Lane Industrial Estate (Keynsham).

Further information on these and other studies which have been completed are provided on the Bath & North East Somerset website at http://www.bathnes.gov.uk/services/environment/land-drainage.

4.5.2 Flood risk from groundwater

Groundwater flooding occurs where the water levels in the ground becomes high enough for the water to appear above the ground surface. This may happen, for example, where there are underlying gravels, or porous or fractured rocks, allowing water to pass through. Flooding from natural springs would be classed as a form of groundwater flooding.

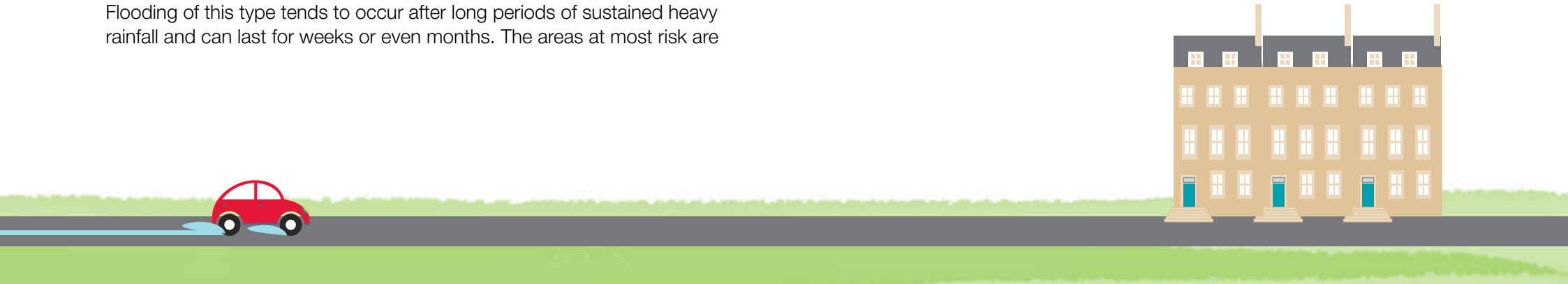
Flooding of this type tends to occur after long periods of sustained heavy rainfall and can last for weeks or even months. The areas at most risk are often low-lying areas where the water table is more likely to be at a shallow depth; flooding can be experienced through water rising up from the underlying aquifer or from water flowing from springs or when watercourses force fluvial flood water into the ground.

The regional Surface Water Management Plan has noted that no recent and relevant flood incidents have been directly attributed to groundwater. There is likely to be some interaction between Ordinary Watercourses, surface water runoff, and groundwater for a number of flood incidents (e.g. as has previously occurred in Chew Magna when fluvial flooding infiltrated into the ground and caused properties to suffer from groundwater flooding).

4.5.3 Flood risk from Main Rivers and Ordinary Watercourses

Flooding from rivers occurs when water overtops the banks of the channel. This can occur because there is more water draining into the channel than it can hold, or because it is blocked. In England watercourses are defined as either Ordinary Watercourses or Main Rivers. Main Rivers are generally the larger arterial watercourses, but smaller watercourses can be designated if they pose a significant flood risk. Flooding from Main Rivers is managed by the Environment Agency using its permissive powers under the Environment Act (1995). The Lead Local Flood Authority have permissive powers to carry out works on Ordinary Watercourses within the area to manage risks from flooding, but Riparian Owners (see Section 3.4.3) have the primary responsibility for managing these risks.

The Environment Agency has published 'Risk of Flooding from Rivers and Sea' maps of flood risk from Main Rivers and Ordinary Watercourses, which are available at: http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?lang=_e&topic=floodmap&layer=default&scale=11&x=415469&y=184167 - x=415469&y=184167&scale=11.

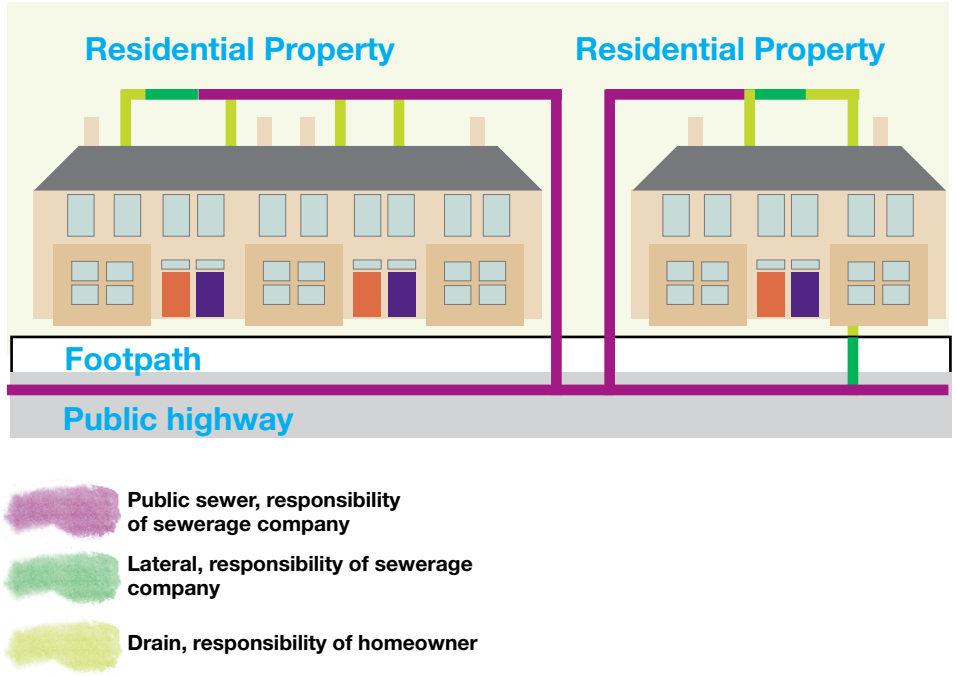


4.5.4 Flooding from sewerage systems

Flooding from sewerage systems occurs when the capacity of the drainage network is exceeded. This can be due to blockage, failure of equipment or overloading of sewers due to rainfall. Sewerage companies are responsible for managing sewerage networks under the Water Industry Act (1991). Wessex Water maintain records of flooding from foul sewers, combined sewer and surface water sewers. The difference between these types of sewer are explained in the glossary in Appendix F.

In 2011 water companies in England and Wales took on new responsibilities for private drainage, under the transfer of private sewers[17]. Under this transfer most private sewers, lateral drains and pumping stations that form part of the sewer or lateral drain that connect to the public sewer network were transferred to the ownership of the water companies. Homeowners remain responsible for household drainage to the point at which it connects to the public sewer. This is normally at the property boundary, as illustrated in Figure 4-2.

Figure 4-2 Responsibility of householders and sewerage companies (from Ofwat website)



17 https://www.ofwat.gov.uk/consumerissues/rightsresponsibilities/sewers/prs_web_sewertransfer . Note not all transfers of ownership have yet been completed.

For the regional Surface Water Management Plan, Wessex Water provided a list of sewer flooding incidents for the period 2013-2014, including those attributable to surface water flooding. Wessex Water has identified postcode locations for 44 occurrences of sewer flooding during this period. These have been mapped and referred to as the Interactive Maps of Local Flood Incidents. This is available in Appendix B of the regional Surface Water Management Plan. Where there is overlap with other sources of flooding (e.g. surface water runoff or Ordinary Watercourses) there may be opportunities for Risk Management Authorities to co-fund or co-deliver flood risk management schemes to address flooding more cost effectively.

4.5.5 Flooding from highway drainage

Highways England are responsible for maintaining drainage systems which drain highways in their network, and the Local Highways Authority are responsible for maintaining surface water drainage systems from all other publically maintained highways in the region. A significant proportion of the recent and relevant recorded incidents of flooding are from highway drainage systems. However, it should be noted that this might not actually reflect the true split of flooding, and may just be the incidents of flooding that the Council were previously responsible for, and hence have been reported to the Council and recorded on its systems.

4.5.6 Flooding from other artificial sources

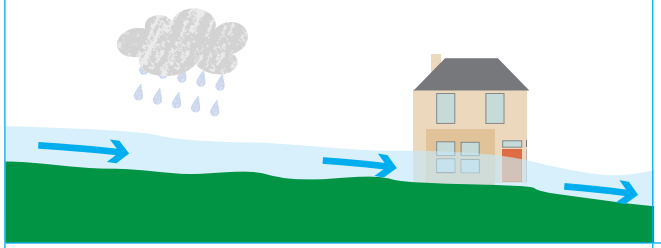
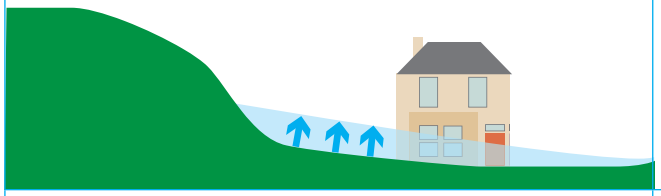
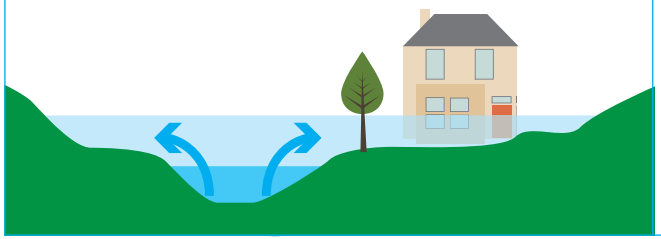
Flooding from other artificial sources includes risk from reservoirs, canals and manmade structures.

The flood risk along canals is generally considered to be low as they are not subject to the same flows as other water bearing infrastructure. The Canals & River Trust do however keep records of flooding along canals within the Bath & North East Somerset area and to date there have been limited flooding incidents recorded.

Reservoirs are designed to accommodate large quantities of water and although it is unlikely that flooding will occur in Bath & North East Somerset, there would be significant consequences if a reservoir structure was to fail. The Environment Agency act as the enforcement authority for reservoirs with a storage capacity greater than 25,000m^3 and, once the relevant parts of the Flood and Water Management Act 2010 have been commenced, reservoirs with a capacity of 10,000 m^3. Responsibility for carrying out work to manage reservoir safety lies with the reservoir owner/operator such as Bristol Water.

The Environment Agency has published mapping to indicate the area that could be flooded is a large reservoir were to fail and release the water it holds. This is available http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?lang=_e&topic=reservoir&layer=default&scale=5&x=387426&y=172732 - x=387426&y=172732&scale=5.

Table 4-3 Sources of flood risk and organisations with responsibilities

Type of flooding	Description of flooding	Organisation/s responsible
Surface water flooding: 	**Surface water flooding**, also referred to as pluvial flooding or flash flooding, is rainwater, snow and other precipitation which is on the surface of the ground and has not entered a watercourse, drainage system or public sewer. This leads to the surface water flowing across the ground and pooling in low-lying areas. This flooding often occurs quickly during, or shortly after, a high intensity storm. Highway runoff is included within this category.	**Bath & North East Somerset Council** is responsible for managing the risk of surface water flooding. Bath & North East Somerset Council is also responsible for managing highway drainage and flooding.
Groundwater flooding: 	Groundwater flooding occurs where the water levels in rock and soil become high enough for the water to appear near to or above the ground surface. This may happen, for example, where there are underlying gravels, or porous or fractured rocks, allowing water to pass through. Flooding from natural springs would be classed as a form of groundwater flooding. This slow response means that groundwater flooding can occur a long time after prolonged or heavy rainfall and can last for a long time (often several weeks or months).	**Bath & North East Somerset Council** is responsible for managing the risk of flooding from groundwater.
Watercourse (fluvial) flooding: 	Watercourse flooding can also be referred to as fluvial flooding and occurs when water overtops the banks of the river or stream. This can occur because there is more water draining into the channel than it can hold, or because it is blocked.	**Bath & North East Somerset Council** is responsible for managing flood risk from Ordinary Watercourses. Flooding from Main Rivers is the management responsibility of the **Environment Agency.** **Riparian Owners** have a responsibility for maintaining the bed and banks of the watercourse.

4.6 Future increases in flood risk

There are a number of factors which will influence flooding in the future. This will result in an increase in the risk of flooding across Bath & North East Somerset unless this is adequately planned for and managed.

Although there are many factors that can increase flood risk, the major risks include:

- climate change;
- new development, and;
- deterioration or blockage of drainage infrastructure and flood defence structures.

4.6.1 Climate change

Climate change is predicted to result in more severe extreme weather which could lead to extreme floods with more serious consequences. Although this will vary depending on the catchment, the UK Climate Projections 2009 Study (described in the Glossary in Appendix F) predicted that by 2050 the South West of England will experience winter rainfall increases of around 12% (very likely to be between 2 and 26%); rainfall on the wettest day in winter will be increased by around 9% (very unlikely to be more than 22%); and peak river volumes in a typical catchment are likely to increase by between 9 and 18%.

Table 4-3 Sensitivity ranges for considering climate change impacts on flooding (extracted from National Planning Policy Framework Technical Guidance)

	Development Design Life			
Parameter	**1990 to 2025**	**2025 to 2055**	**2055 to 2085**	**2085 to 2115**
Peak river flow	+10%	+20%	+20%	+20%
Peak rainfall intensity	+5%	+10%	+20%	+30%

As part of the regional Surface Water Management Plan additional surface water modelling was undertaken to assess the impact of climate change on surface water flood risk in Bath & North East Somerset. A 30% uplift was applied to the rainfall (as per Table 4 3), and the regional Surface Water Management Plan report notes that:

"The results show that climate change is likely to have a notable impact on flood risk across the Bath & North East Somerset area. Flood outlines for the 1 in 100 year return period rainfall event are slightly larger than present day outlines in all flooding wet-spot locations. Increases in flood extents are generally more pronounced in flatter valleys where water would spread further at lower depths. In steep-sided valleys flood extents do not increase significantly, however flooding becomes deeper."[18]

Further analysis undertaken for the regional Surface Water Management Plan indicated that with 30% allowance for climate change, an additional 656 residential properties, 22 critical infrastructure locations and two emergency responders may be at risk of surface water flooding following a 1 in 100 year return period rainfall event.

18 JBA Consulting (2015), Bath & North East Somerset Surface Water Management Plan

4.6.2 New development

If new development and changes in land use are not properly controlled and managed this could cause increased runoff during rainfall events and result in increased flood risk.

The Lead Local Flood Authority are a Statutory Consultee for major planning applications and will scrutinise applications in terms of surface water flood risk and sustainable drainage. This will also provide guidance on all applications which have surface water implications and may affect local flood risk.

When making planning decisions the Local Planning Authority and Lead Local Flood Authority work together to review development proposals to ensure that inappropriate new developments are prevented or directed away from high risk flood areas, and that appropriate drainage is to be provided. This includes a review of whether suitable consideration has been given to climate change.

There are a number of national and local documents which need to be considered by developers prior to applying for a Planning Application. Table 4-4 sets out the policies and legislation in relation to the management of surface water drainage for new developments. Table 4-5 sets out the national and local guidance in relation to the management of surface water drainage for new developments.

Table 4-4 Surface water drainage policies and legislation for development

Policy/ legislation	More information
National Planning Policy Framework Paragraph 103	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf
Sustainable drainage systems: Written statement (HCWS161) 18 December 2014	http://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2014-12-18/HCWS161/
Bath & North East Somerset Council emerging Placemaking Plan: Policy SU1	TBC
Building Regulations Part H (HM Government, 2010)	http://www.planningportal.gov.uk/buildingregulations/approveddocuments/parth/approved
Bath & North East Somerset Council's Core Strategy	http://www.bathnes.gov.uk/services/planning-and-building-control/planning-policy/core-strategy-examination

Table 4-5 Surface water drainage guidance for development

Guidance	More information
Planning Practice Guidance (Department for Communities and Local Government)	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf
Non-statutory technical standards for sustainable drainage systems (Department for Environment, Food & Rural Affairs, 2015)	http://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2014-12-18/HCWS161/
West of England Sustainable Drainage Developer Guide (West of England Partnership, 2015)	http://www.bathnes.gov.uk/sites/default/files/sitedocuments/Planning-and-Building-Control/Planning-Policy/LDFGeneral/bd6457_woe_developer_guide_complete_72dpi.pdf
Surface Water Management Plan for Bath & North East Somerset (Bath & North East Somerset Council, 2015)	http://www.bathnes.gov.uk/services/environment/land-drainage
Environment Agency Local Flood Risk Standing Advice (Environment Agency, 2014)	http://www.bathnes.gov.uk/sites/default/files/sitedocuments/Planning-and-Building-Control/Apply-for-Planning-Permission/flood_risk_standing_advice_banes_v1_0_march_2014.pdf
Bath& North East Somerset Council's Local Flood Risk Management Strategy (Bath & North East Somerset Council, 2015)	-

If national and local guidance is adopted, flood risk should not increase as a result of new development. There will occasionally be situations where development in the floodplain is unavoidable or where, when all things are considered, the risks posed are outweighed by very significant environmental and socio-economic benefits. It is important in these circumstances to be able to demonstrate no detrimental impact on downstream impacts and that new development will remain safe through resilience and resistance measures. The Lead Local Flood Authority will review this as part of the application process. It is therefore important that developers follow national and local guidance and seek advice from the Lead Local Flood Authority as needed to ensure the right information is provided as part of a planning application.

4.6.3 Asset deterioration and/or blockage

Unless maintained, deterioration will occur in the condition and performance of existing drainage infrastructure and flood defence structures. As a result an increase in future flood risk may be seen unless there is investment to ensure drainage infrastructure is functioning. The Risk Management Authorities listed in Section 3 maintain their assets to minimise the risks they are responsible for. The Lead Local Flood Authority also maintain an asset register, detailed in Section 3.3.2, and this is a vital tool to help manage flood risk.

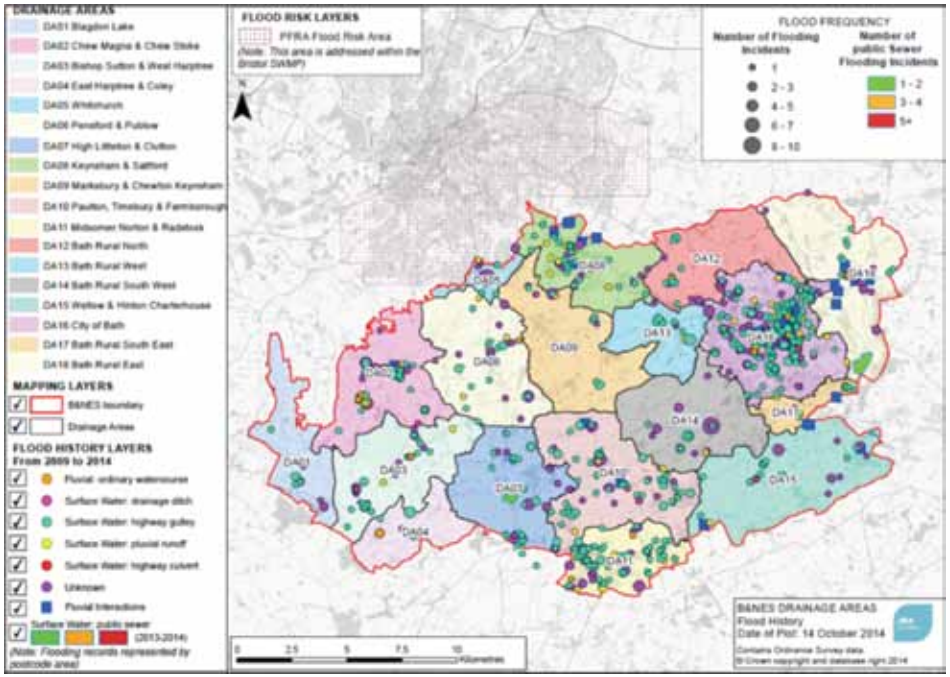
As part of the regional Surface Water Management Plan a high level analysis was undertaken to look at critical infrastructure assets comprising of bridges, culverts and screens. These structures could contribute to significant flooding if they became blocked or were in a state of collapse requiring repair.

This high level analysis identified 27 structures which are deemed critical for maintenance to avoid blockage. The Strategy Action Plan (section 5.1) sets out a process for developing prioritised routine and emergency asset monitoring.

4.7 Communities most at risk from local flooding

A number of 'wet-spots' were identified in the regional Surface Water Management Plan. These were derived from analysis of recent and relevant flood incident data, and verified through an analysis of the predicted surface water flood risk areas identified by the Updated Flood Map for Surface Water. In total 53 individual wet-spots were identified. In every wet-spot a suitable action was identified in the regional Surface Water Management Plan, and has been transposed into this Local Flood Risk Management Strategy to form the actions the Lead Local Flood Authority will take, in partnership with others, to manage local flood risk. Section 5.2 and Appendix D provide further information on these actions.

Figure 4-3 Exert of the Interactive Map of Local Flood Incidents, taken from the Surface Water Management Plan



Section 5
Action Plan

This section sets out the actions the Lead Local Flood Authority will take, in partnership with others, to manage local flood risk. Measures already being delivered are outlined in Section 3. Actions that the Lead Local Flood Authority will take across Bath & North East Somerset ('Strategy Action Plan') are outlined in Section 5.1, and location-specific actions are identified in Section 5.2.

The delivery of actions in the Local Flood Risk Management Strategy will be dependent upon the availability of funding. Therefore a phased implementation will be required. The actions are also subject to legislative, regulatory and financial changes during the ten year period of the Local Flood Risk Management Strategy and the Council needs to maintain some flexibility during the delivery period. The Lead Local Flood Authority will update the action plan annually, and this update will identify these changes and the effect on the Local Flood Risk Management Strategy actions.

5.1 The Strategy Action Plan

The Strategy Action Plan measures are identified in Table 5-1 and are broken down by the objectives set out in Section 2. These are repeated below for reference:

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

The Strategy Action Plan includes measures which are currently underway, but also includes new measures which are necessary to ensure the delivery of the objectives outlined. It is a 'live' document which the Lead Local Flood Authority will update as part of the annual review of the action plan.

Objectives

For reference, Table 5-1 is broken down into the following columns:

Ref: This column provides the unique reference for each action included within this Strategy Action Plan.

Action: This column provides a description of the specific actions which have been developed to help ensure each strategy objective is achieved.

Expected Outcome/Indicator for Success: This column provides a description of the desired outcome, or the indicator for success, following implementation of the action.

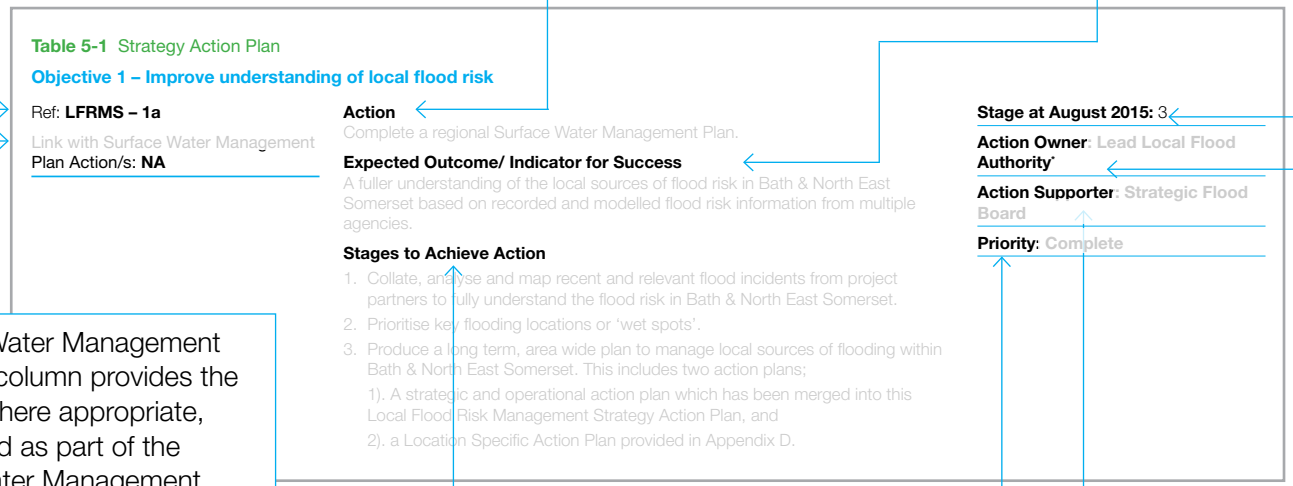


Table 5-1 Strategy Action Plan

Objective 1 – Improve understanding of local flood risk

Ref: **LFRMS – 1a**

Link with Surface Water Management Plan Action/s: **NA**

Action

Complete a regional Surface Water Management Plan.

Expected Outcome/ Indicator for Success

A fuller understanding of the local sources of flood risk in Bath & North East Somerset based on recorded and modelled flood risk information from multiple agencies.

Stages to Achieve Action

1. Collate, analyse and map recent and relevant flood incidents from project partners to fully understand the flood risk in Bath & North East Somerset.
2. Prioritise key flooding locations or 'wet spots'.
3. Produce a long term, area wide plan to manage local sources of flooding within Bath & North East Somerset. This includes two action plans;

   1). A strategic and operational action plan which has been merged into this Local Flood Risk Management Strategy Action Plan, and

   2). a Location Specific Action Plan provided in Appendix D.

Stage at August 2015: 3

Action Owner: Lead Local Flood Authority*

Action Supporter: Strategic Flood Board

Priority: Complete

Stage at August 2015: The stage number indicates progress against this action and refers to the 'Stages to Achieve Action' section of the table.

Action Owner: This sets out who is responsible for overseeing the implementation of each action.

Action Supporter: This column sets out who else will be involved, in addition to the action owner, to support implementation of the action.

Link with Surface Water Management Plan Action/s: This column provides the unique reference, where appropriate, of actions developed as part of the regional Surface Water Management Plan. These have now been incorporated into, and will be delivered as part of, this Strategy Action Plan. The wording of the actions may be slightly different to that provided in the regional Surface Water Management Plan, but the principles will be addressed through the implementation of the 'Stages to Achieve Action' plan.

Stages to Achieve Action: This column sets out the stages considered necessary to successfully achieve the action and meet the expected outcome/ indicator for success.

Priority: The priority of each action has been assigned as high, medium or low. This does not necessarily mean the actions will be undertaken in this order, but just that some actions are deemed to be a greater priorities than others.

Table 5-1 Strategy Action Plan

Objective 1 – Improve understanding of local flood risk

Ref: **LFRMS – 1a** Link with Surface Water Management Plan Action/s: **NA**	**Action** Complete a regional Surface Water Management Plan. **Expected Outcome/ Indicator for Success** A fuller understanding of the local sources of flood risk in Bath & North East Somerset based on recorded and modelled flood risk information from multiple agencies. **Stages to Achieve Action** 1. Collate, analyse and map recent and relevant flood incidents from project partners to fully understand the flood risk in Bath & North East Somerset. 2. Prioritise key flooding locations or 'wet spots'. 3. Produce a long term, area wide plan to manage local sources of flooding within Bath & North East Somerset. This includes two action plans; 1). A strategic and operational action plan which has been merged into this Local Flood Risk Management Strategy Action Plan, and 2). a Location Specific Action Plan provided in Appendix D.	**Stage at August 2015:** 3 **Action Owner:** Lead Local Flood Authority* **Action Supporter:** Strategic Flood Board **Priority:** Complete
Ref: **LFRMS – 1b** Link with Surface Water Management Plan Action/s: **SOAP01**	**Action** Continue to develop an updated flood reporting system. **Expected Outcome/ Indicator for Success** Flood incident data provided in a standardised format which will improve ability to use the data as a beneficial source of information. **Stages to Achieve Action** 1. Review the Surface Water Management Plan database summarising flooding to understand key information. 2. Review Bath & North East Somerset flood incident reporting system. 3. Update the reporting system to include prompts for key information. Information to include; date, location, duration, an idea of the flood source, description of the flood extent and depth. 4. Undergo annual review of the flood reporting system and update as appropriate.	**Stage at August 2015:** 4 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Council Connect, Local Highways Authority, Environment Agency, Wessex Water, Avon Fire and Rescue. **Priority:** High

* Lead Local Flood Authority: Bath & North East Somerset Council's Drainage and Flooding Team undertake most of these responsibilities.

Objective 1 – Improve understanding of local flood risk

Ref: **LFRMS – 1c**

Link with Surface Water Management Plan Action/s: **NA**

Action
Improve the use of visual tools (e.g. GIS) to record and analyse flooding incidents.

Expected Outcome/ Indicator for Success
A holistic picture of flooding in the region and improved ability to identify priority areas in the future.

Stages to Achieve Action

1. Identify and map flooding incidents as part of the regional Surface Water Management Plan.
2. Develop a process to add new flooding incidents to GIS when they occur.
3. Incorporate flooding incidents to the GIS.

Stage at August 2015: 3

Action Owner: Lead Local Flood Authority, Bath & North East Somerset GIS team.

Action Supporter: Environment Agency, Wessex Water

Priority: Medium

Ref: **LFRMS– 1d**

Link with Surface Water Management Plan Action/s: **NA**

Action
Continue to complete investigations of flood incidents, where the appropriate criteria is met (see Section 3.4.6).

Expected Outcome/ Indicator for Success
The appropriate Risk Management Authority is identified, and an investigation is completed

Stages to Achieve Action

1. Lead Local Flood Authority to identify the relevant authority responsible for undertake a Section 19 investigation where the criteria is met.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority

Action Supporter: Relevant Risk Management Authorities.

Priority: High (following flood events which meet the criteria)

Ref: **LFRMS– 1e**

Link with Surface Water Management Plan Action/s: **NA**

Action
Ensure that appropriate data on flooding is shared between organisations, and between organisations and communities.

Expected Outcome/ Indicator for Success
Awareness about flood risk is improved within Bath & North East Somerset.

Stages to Achieve Action

1. Ensure Risk Management Authorities share appropriate data about flooding with the Lead Local Flood Authority. (Links specially with LFRMS 1a & 3a).
2. Ensure communities and other organisations can share knowledge about flooding with the relevant Risk Management Authority. (Links specially with LFRMS 2a, 2b & 2d).
3. Ensure relevant flooding information obtained through stages 1 and 2 above is shared appropriately with communities in Bath & North East Somerset

Stage at August 2015: 2

Action Owner: Lead Local Flood Authority

Action Supporter: Relevant Risk Management Authorities, communities, other organisations

Priority: Medium

Objective 2 – Promote community awareness and build capability for appropriate action

Ref: **LFRMS– 2a** Link with Surface Water Management Plan Action/s: **NA**	**Action** Establish clearer routes for communicating with communities and businesses about the roles and responsibilities for flood risk. **Expected Outcome/ Indicator for Success** Good communication will enable people to clearly understand their risks, the impact of proposed actions to manage these risks, and what can be done by communities and businesses to manage the residual risk. **Stages to Achieve Action** 1. Agree routes for communication between communities, the Operational Flood Working Group, Local Flood Representatives and other appropriate partners. 2. Raise awareness of ways to report property flooding and communicate about other appropriate flooding information.	**Stage at August 2015:** 1 & 2 **Action Owner:** Lead Local Flood Authority **Action Supporter: P**arish councils, Wards, Federation of Bath Residents Association, Local Flood Representatives, Environment Agency, Wessex Water **Priority:** Medium
Ref: **LFRMS– 2b** Link with Surface Water Management Plan Action/s: **NA**	**Action** Help communities understand their own flood risk and their responsibilities for managing flooding. **Expected Outcome/ Indicator for Success** Improved awareness within communities about responsibilities around managing flooding and how to assess flood risks. **Stages to Achieve Action** 1. Work with partners to support community-led flood forums or flood awareness events.	**Stage at August 2015:** – **Action Owner:** Lead Local Flood Authority, Emergency Planning and Business Continuity **Action Supporter:** Local Flood Representatives Parish Councils, Wards, Community Groups, Environment Agency Wessex Water **Priority:** Medium
Ref: **LFRMS– 2c** Link with Surface Water Management Plan Action/s: **NA**	**Action** Raise awareness of land drainage and riparian responsibilities. **Expected Outcome/ Indicator for Success** Improved maintenance of watercourses by Riparian Owners **Stages to Achieve Action** 1. Work with Local Flood Representatives, or other appropriate partners, to ensure awareness riparian responsibilities is improved amongst communities.	**Stage at August 2015:** – **Action Owner:** Lead Local Flood Authority **Action Supporter:** Local Flood Representatives, other appropriate partners **Priority:** Medium

Objective 2 – Promote community awareness and build capability for appropriate action

Ref: **LFRMS– 2d**

Link with Surface Water Management Plan Action/s: **SOAP 08**

Action
Develop a network of Local Flood Representatives to act as a point of contact in the community on flooding issues.

Expected Outcome/ Indicator for Success
Improved communication between individual communities and the Lead Local Flood Authority on flooding issues.

Stages to Achieve Action

1. Invite Parish Councils, the Federation of Bath Residents Associations and Bath Wards to nominate Local Flood Representatives as a communication channel between the Operational Flood Working Group and communities.
2. Appoint Local Flood Representatives.
3. Continue to review Local Flood Representatives and recruit as needed.

Stage at August 2015: 2

Action Owner: Lead Local Flood Authority

Action Supporter: Parish Councils, Wards, Federation of Bath Residents Association, Local Flood Representatives

Priority: Medium

Ref: **LFRMS – 2e**

Link with Surface Water Management Plan Action/s: **NA**

Action
Ensure communities know what to do in the event of a flood.

Expected Outcome/ Indicator for Success
Communities can approach the appropriate Risk Management Authority for support and are able to recover more quickly as a result of actions taken.

Stages to Achieve Action

1. Develop a guidance sheet to improve awareness of what communities should do in the event of a flood.
2. Share this guidance sheet with Councillors and communities through the appropriate communication channels established as part of LFRMS 2a.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority

Action Supporter: Local Flood Representatives, Councillors

Priority: Medium

Objective 3 – Manage local flood risk through capital and maintenance investment

Ref: **LFRMS – 3a**

Link with Surface Water Management Plan Action/s: **SOAP03 & SOAP04**

Action
Continue to work with partners, including adjacent authorities, to develop long term approaches to manage flood risk.

Expected Outcome/ Indicator for Success
A more coordinated approach to the management of local flood risk in Bath & North East Somerset.

Stages to Achieve Action

1. Form a Strategic Flood Board and Operational Flood Working Group.
2. Schedule regular meetings of the Strategic Flood Board, and Operational Flood Working Group as required.

Stage at August 2015: 2

Action Owner: Lead Local Flood Authority.

Action Supporter: Strategic Flood Board, Operational Flood Working Group.

Priority: High

Ref: **LFRMS – 3b**

Link with Surface Water Management Plan Action/s: **NA**

Action
Deliver the actions in the regional Surface Water Management Plan.

Expected Outcome/ Indicator for Success
Improved local flood risk in the Bath & North East Somerset.

Stages to Achieve Action

1. Use the findings from the regional Surface Water Management Plan to inform the need for projects/ schemes.
2. Work with the Strategic Flood Board, and Operational Flood Working Group, to help deliver this as part of a long term plan.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority, Local Highways Authority.

Action Supporter: Strategic Flood Board, Operational Flood Working Group.

Priority: High

Ref: **LFRMS – 3c**

Link with Surface Water Management Plan Action/s: **SOAP05**

Action
Continue to develop a register of assets which significantly affect local flood risk.

Expected Outcome/ Indicator for Success
Effective management of assets which have a significant effect on flood risk

Stages to Achieve Action

1. Develop an improved flood risk asset register and record template, a process for the assessment of assets, and establish a periodic monitoring procedure for further discussion.
2. Strategic Flood Board to agree the register and record template, and the assessment and monitoring procedures.
3. Produce the agreed updated flood risk asset register and record.
4. Record and monitor assets using the agreed procedures.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority.

Action Supporter: Strategic Flood Board, Bath & North East Somerset GIS team, Local Highway Authority.

Priority: Medium

Objective 3 – Manage local flood risk through capital and maintenance investment

Ref: **LFRMS – 3d** Link with Surface Water Management Plan Action/s: **NA**	**Action** Designate structures that effect local flood risk, to protect them from alteration or removal. **Expected Outcome/ Indicator for Success** Significant assets will not be altered, removed or replaced without consideration of the impacts to flood risk. This will also enable the Lead Local Flood Authority to understand who owns and maintains structures. **Stages to Achieve Action** 1. Using the procedure identified for the identification of flood risk assets (Action 3c), identify 3rd party assets. 2. Implement individual procedures on a case by case basis.	**Stage at August 2015:** 1 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Relevant partners **Priority:** Low
Ref: **LFRMS– 3e** Link with Surface Water Management Plan Action/s: **NA**	**Action** Continue to assess applications for works on Ordinary Watercourses, through the land drainage consent process. **Expected Outcome/ Indicator for Success** To ensure the normal flow of water in Ordinary Watercourses with no increase in flood risk **Stages to Achieve Action** 1. Use consenting and enforcement powers when required 2. Raise awareness of Land Drainage Consent via Planning and other means.	**Stage at August 2015:** 1 **Action Owner:** Lead Local Flood Authority. **Action Supporter:** Local Planning Authority. **Priority:** Medium
Ref: **LFRMS – 3f** Link with Surface Water Management Plan Action/s: **See the Location Specific Action Plan for wet spots provided in Appendix D**	**Action** Identify catchments where improved land management could reduce flood risk and/ or improve the water environment. **Expected Outcome/ Indicator for Success** Reduced local flood risk and improved overall water environment (e.g. contribution to meeting Water Framework Directive) **Stages to Achieve Action** 1. Monitor flooding incidents recorded in wet spots identified in the regional Surface Water Management Plan to identify catchments where improved land management could reduce flood risk, and work with other organisations to help identify potential areas. 2. If improved land management is deemed as preferable in order to reduce flood risk or improve the water environment, investigate opportunities to work with landowners to develop schemes.	**Stage at August 2015:** 1 **Action Owner:** Lead Local Flood Authority. **Action Supporter:** Relevant partners **Priority:** Medium

Objective 3 – Manage local flood risk through capital and maintenance investment

Ref: **LFRMS – 3g**

Link with Surface Water Management Plan Action/s: **SOAP06**

Action
Identify critical highway drainage assets, in order to undertake targeted maintenance and respond to issues as the Local Highways Authority.

Expected Outcome/ Indicator for Success
More effective management of highways drainage assets to mitigate/ reduce flood risk.

Stages to Achieve Action

1. Investigate highways drainage flooding events to identify the critical assets.
2. Develop a revised maintenance regime for these critical assets; or identify assets that require replacement or improvement.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority, Local Highways Authority.

Action Supporter: –

Priority: High

Ref: **LFRMS – 3h**

Link with Surface Water Management Plan Action/s: **NA**

Action
Prioritise maintenance and clearance works to culverts and watercourses.

Expected Outcome/ Indicator for Success
More targeted and effective management of culverts and watercourses which pose a significant flood risk.

Stages to Achieve Action

1. Identify and prioritise which culverts or watercourse pose the most significant flood risk to people, property and infrastructure
2. Develop a revised maintenance regime for these critical assets; or identify assets that require replacement or improvement.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority

Action Supporter: Riparian Owners

Priority: High

Ref: **LFRMS – 3i**

Link with Surface Water Management Plan Action/s: **NA**

Action
Evaluate flood reports to identify where drainage improvements or other mitigation works are possible.

Expected Outcome/ Indicator for Success
Improved drainage/ flood risk.

Stages to Achieve Action

1. Identify locations and investigate flood mechanisms.
2. Prioritise locations using a risk based approach.
3. Design schemes.
4. Implement schemes where possible.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority

Action Supporter: Relevant partners

Priority: High

Objective 4 – Prevent inappropriate development that creates or increases flood risk

Ref: **LFRMS – 4a**

Link with Surface Water Management Plan Action/s: **SOAP02**

Action
Continue to review planning applications to make recommendations for surface water drainage and managing flood risk.

Expected Outcome/ Indicator for Success
Planning decisions are properly informed about flood risk and drainage requirements.

Stages to Achieve Action

1. Ensure new developments consider all flood risk and climate change. Promote Sustainable Drainage Systems in accordance with National Planning Policy Framework, the Bath & North East Somerset Place Making Plan, West of England Sustainable Drainage Systems Guidance and other relevant sustainable drainage requirements.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority, Local Planning Authority*, Environment Agency.

Action Supporter: Wessex Water, Canal & River Trust Emergency Planning Authority

Priority: High

Ref: **LFRMS – 4b**

Link with Surface Water Management Plan Action/s: **NA**

Action
Publish the West of England Sustainable Drainage System Guidance for developers, and work across the West of England to co-ordinate sustainable drainage system implementation.

Expected Outcome/ Indicator for Success
Developers utilise sustainable methods of surface water drainage and increases in surface water flow from future development are mitigated.

Stages to Achieve Action

1. Complete the West of England Sustainable Drainage Systems Guidance document.
2. Publish the guidance on the Bath & North East Somerset Council website and ensure this is communicated to developers as appropriate.

Stage at August 2015: 2

Action Owner: Lead Local Flood Authority, Local Planning Authority.

Action Supporter: West of England Partnership.

Priority: High

* LPA: Bath & North East Somerset Council/ Local Planning Authority

Objective 4 – Prevent inappropriate development that creates or increases flood risk

Ref: **LFRMS – 4c**

Link with Surface Water Management Plan Action/s: **NA**

Action
Include Sustainable Drainage System planning policy within the Council's Placemaking Plan/ Core Strategy.

Expected Outcome/ Indicator for Success
Sustainable drainage is incorporated into new development to reduce surface water runoff and minimise its contribution to flooding.

Stages to Achieve Action

1. Incorporate Sustainable Drainage System planning policy within the Council's Placemaking Plan/ Core Strategy.

Stage at August 2015: 1

Action Owner: Local Planning Authority, Lead Local Flood Authority

Action Supporter: –

Priority: High

Ref: **LFRMS – 4d**

Link with Surface Water Management Plan Action/s: **NA**

Action
Continue to provide guidance at the pre-application stage on flooding issues.

Expected Outcome/ Indicator for Success
Drainage and flooding issues are adequately considered prior to applications gaining approval and that applications consider the use of Sustainable Drainage Systems.

Stages to Achieve Action

1. Work with developers and the Local Planning Authority to implement the most appropriate drainage strategy for planning applications.
2. Promotion of advisory service via Council communication channels and Local Flood Representatives.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority, Local Planning Authority.

Action Supporter: Environment Agency, Wessex Water.

Priority: High

Ref: **LFRMS – 4e**

Link with Surface Water Management Plan Action/s: **NA**

Action
Consider the need for additional planning guidance on flooding specific to Bath & North East Somerset.

Expected Outcome/ Indicator for Success
Effective planning guidance on flooding is provided within Bath & North east Somerset.

Stages to Achieve Action

1. Continually review the appropriateness and effectiveness of current planning guidance to minimise flooding in Bath & North East Somerset.
2. Take appropriate action to improve planning guidance and considered necessary.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority, Local Planning Authority.

Action Supporter: –

Priority: Low

Objective 4 – Prevent inappropriate development that creates or increases flood risk

Ref: **LFRMS – 4f**

Link with Surface Water Management Plan Action/s: **NA**

Action

Identify areas that are sensitive to surface water flood risk and develop appropriate surface water drainage and flood risk requirements for any proposed development in these areas.

Expected Outcome/ Indicator for Success

To ensure flood risk is not compromised and potentially improved with any proposed development.

Stages to Achieve Action

1. Identify development sensitive areas.
2. Develop appropriate drainage and/or flood risk requirements.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority

Action Supporter: Local Planning Authority

Priority: Medium

Objective 5 – Improve flood preparedness, warning and ability to recover

Ref: **LFRMS – 5a**

Link with Surface Water Management Plan Action/s: **NA**

Action
Help develop a multi-agency flood plan for high risk areas in Bath & North East Somerset.

Expected Outcome/ Indicator for Success
A joined up approach that ensures resources are effectively managed.

Stages to Achieve Action

1. Identify areas at high risk.
2. Work with partners and communities to produce plans.
3. Share the flood plan with communities in the region using the agreed approach developed in LFRMS 2a.

Stage at August 2015: 1

Action Owner: Emergency Planning Authority

Action Supporter: Strategic Flood Board

Action Supporter: Emergency Services, Environment Agency, Lead Local Flood Authority.

Priority: Medium

Ref: **LFRMS – 5b**

Link with Surface Water Management Plan Action/s: **NA**

Action
Communicate information to communities, businesses and individuals on flood preparedness and recovery.

Expected Outcome/ Indicator for Success
Communities, individuals and businesses can adequately prepare for flooding and are more likely to be able to recover more quickly following a flood event.

Stages to Achieve Action

1. Work with Local Flood Representatives, or other appropriate partners, to target the most vulnerable communities, businesses and individuals as outlined in the regional Surface Water Management Plan / those interested in developing their own Community Flood Plans.
2. Provide literature and templates to ensure plans are appropriately structured, developed and maintained.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority, Emergency Planning Authority.

Action Supporter: Environment Agency, Parish Councils, Community Groups, Local Flood Representatives.

Priority: Low

Objective 5 – Improve flood preparedness, warning and ability to recover

Ref: **LFRMS – 5c**

Link with Surface Water Management Plan Action/s: **NA**

Action
Promote uptake of the Environment Agency's Floodline Warnings Direct service.

Expected Outcome/ Indicator for Success
Individuals will have improved access to flood warnings which will aid them in their ability to respond to threats.

Stages to Achieve Action

1. Review information provided on the Bath & North East Somerset Council website and update as appropriate. Ensure consideration is also given to providing information about the service on appropriate Council literature and other communications.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority, Communications team.

Action Supporter: Environment Agency.

Priority: Low

Ref: **LFRMS – 5d**

Link with Surface Water Management Plan Action/s: **SOAP07**

Action
Improve warnings and proactive mitigation in response to predicted rainfall.

Expected Outcome/ Indicator for Success
Assets can be targeted for maintenance in advance of forecast rainfall to reduce the risk of blockage, and hence flood risk.

Stages to Achieve Action

1. Develop a timely and appropriate response to flood and serve weather warnings; giving consideration for proactively maintaining assets in response to forecast rainfall.

Stage at August 2015: 1

Action Owner: Lead Local Flood Authority.

Action Supporter: Local Highways Authority, Emergency Planning and Business Continuity, Met Office.

Priority: High

5.2 Location-Specific Action Plan

The regional Surface Water Management Plan is the most comprehensive source of information about location-specific actions. It contains at least one action for each of the wet-spots identified as being vulnerable to surface water flood risk based on recent and relevant flooding incidents and predicted flood risk. For the Local Flood Risk Management Strategy the Location Specific Action Plan has been transposed from the regional Surface Water Management Plan. This is a 'live' action plan which will be updated as measures are implemented or new information becomes available following further inspections or investigations. It will be reviewed on an annual basis.

This Location Specific Action Plan recommends measures to investigate, reduce or mitigate local flood risk in Bath & North East Somerset, and has been developed so it can be delivered in a phased approach. In many locations the action plan recommends further investigation or survey in the first instance. This is necessary to fully understand flooding mechanisms and impacts prior to the development of flood mitigation schemes.

A significant number of the wet-spots identified in the regional Surface Water Management Plan (42 of the 53 identified in total) had common actions around improvements to highway and/or land drainage, and have been grouped together in the regional Surface Water Management Plan and Local Flood Risk Management Strategy. For these wet-spots a five stage implementation plan was identified in the regional Surface Water Management Plan:

1. monitor;
2. check cyclic maintenance has been carried out;
3. investigate performance of highway/land drainage system, identifying any maintenance or design requirements;
4. carry out required maintenance or design and construct engineering scheme, and;
5. implement continued maintenance programme.

The 42 wet-spots identified in the regional Surface Water Management Plan which have been grouped together with common actions are listed in Table 5-2. Further details on the action owner, priority and indicative cost are provided in Appendix D.

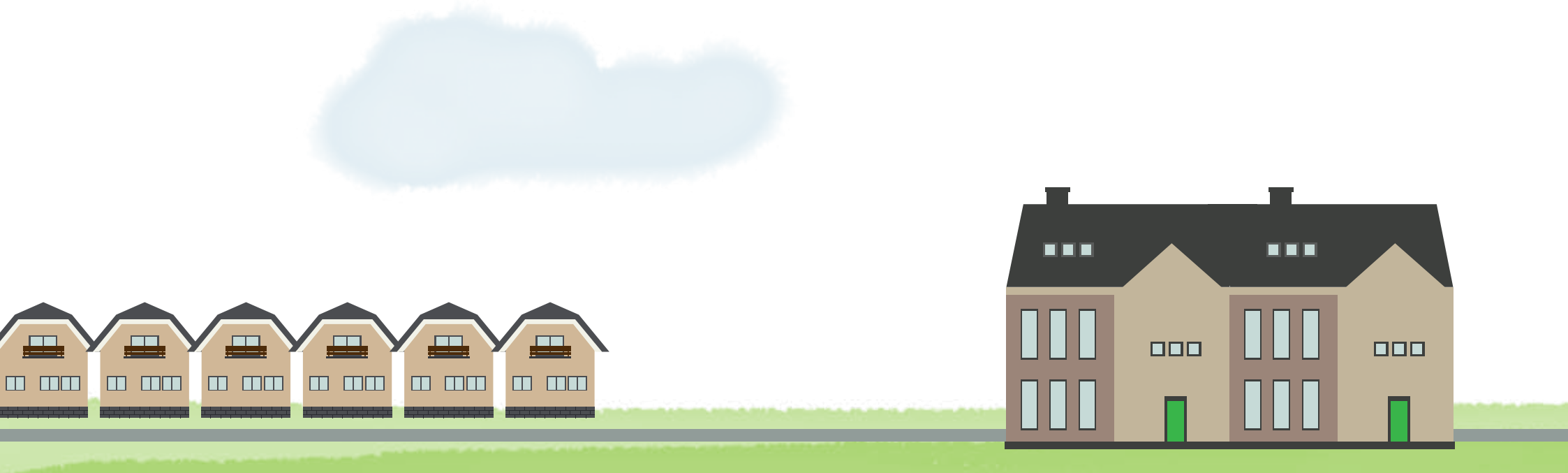


Table 5-2 Action plan with common actions for highway/land drainage improvements

Wet-spot ID	Location	Wet-spot ID	Location
DA06A	Publow Lane and Pensford Hill	DA16I	Priory Park Road, Wiscombe
DA07B	Wells Road, Hallatrow	DA09A	Redlynch Lane, Chewton, Keynsham
DA07C	Rush Hill, Farrington	DA12A	Bath Road, Kelston
DA10C	Durcott Lane, Camerton and Radford	DA13A	Wells Road, Corston
DA10D	Brookside Paulton	DA14B	Tunley Road, Longhouse
DA11A	Hayes Park area, Midsomer Norton	DA16A	Weston and Upper Weston
DA11D	Fortescue Road, Radstock Regeneration area	DA16C	Newbridge Road
DA14A	Vicinity of Crossways, Dunkerton	DA01A	Ubley, Blagdon Lake
DA16B	Charlcombe Lane and Landon Road, Larkhall and Fairfield	DA03A	Wick Road and Ham Lane, Bishop Sutton
DA16E	Camden Crescent, Walcot	DA04A	South Widcombe
DA16F	Bathwick Street, Bathwick	DA04B	Coley
DA16H	Lymore Avenue, South Twerton	DA07A	Clutton Hill
DA16J	Wellsway, Bloomfield	DA08C	Bath Road, Saltford
DA03B	Bristol Road, Whitecross Farm	DA11C	Fosse Way, Clandown
DA05A	Bristol Road, Whitchurch	DA11E	Kilmersdeon Road, Haydon
DA06B	Charlwood	DA13B	Pennyquick, Newton St Loe
DA08A	Park Road, Keynsham	DA15A	Old Milford Road, Twinhoe
DA10A	The Street, Farmborough	DA15B	The High St, Wellow
DA10E	Carlingcott Lane	DA15C	Green Lane, Hinton Charterhouse
DA10F	Bath Road & Albert Avenue, Peasdown St John	DA17A	Brassknocker Hill, Monkton Combe
DA11B	Charlton Road, Midsomer Norton	DA18A	Box Road and London Road East, Batheaston and Bathford

In addition, 14 wet-spots identified in the regional Surface Water Management Plan have been assigned specific actions. In these wet-spots the actions are bespoke to each area, and range from inspection and investigation, through to scheme design and build. The following wet-spots have specific actions identified:

- Bath City Centre;
- Batheaston and Bathford;
- Chew Magna;
- Chew Stoke;
- Clandown;
- West Harptree;
- Whitchurch;
- Keynsham;
- Lower Bristol Road;
- Timsbury;
- Midsomer Norton;
- Weston and Upper Weston;
- Weston Village;
- Weston Park, and;
- White Cross Farm (Bristol Road).

Across these 14 wet-spots 21 specific actions have been identified (i.e. a few wet-spots have more than 1 specific action). 17 of these actions are considered high priority in the regional Surface Water Management Plan, with a further four considered as medium priority. The specific actions for each wet-spot is provided in Appendix D.

5.3 Maximising the wider benefits of flood risk management

Flood risk management intervention can offer a significant range of wider benefits beyond reducing flood risk. For example, it can:

- protect or enhance the environment by improving water quality, hydromorphology of watercourses, creating habitat or new biodiversity;
- provide amenity for local communities;
- improve mental and physical health through reduction of the stress associated with flood risk, and creation of new amenity features integrated into the design of a scheme;
- support economic regeneration, and;
- unlock additional land for future development.

Historically, drainage and flood risk management infrastructure have been designed and implemented with limited focus on the wider social, environmental or economic benefits. Through implementation of the Local Flood Risk Management Strategy actions the Lead Local Flood Authority will encourage and promote investment in drainage and flood risk management which integrates wider social, economic and environmental benefits into design and implementation.

Indeed, to access many funding sources the Lead Local Flood Authority will need to demonstrate the wider benefits of our investment. The Lead Local Flood Authority will therefore need to think carefully during design and implementation to maximise the wider social, economic and environmental benefits of our investment, which in turn will support access to funding. This can only be achieved through close partnership working and early consideration of the wider opportunities through investment. For example, through implementation of green infrastructure in developed areas which capture surface water at source, thereby reducing flood risk, but which also provide significant opportunities to improve amenity, and to create habitat and biodiversity within developed areas.

5.3.1 Environmentally responsible flood risk management

There is a range of European and UK legislation which ensures protection and enhancement of the environment, such as the Strategic Environment Assessment Directive, the Water Framework Directive and the Conservation of Habitats and Species Regulation ('Habitats Regulation'). Any investment must not cause detriment to the environment, and should seek enhancement wherever possible.

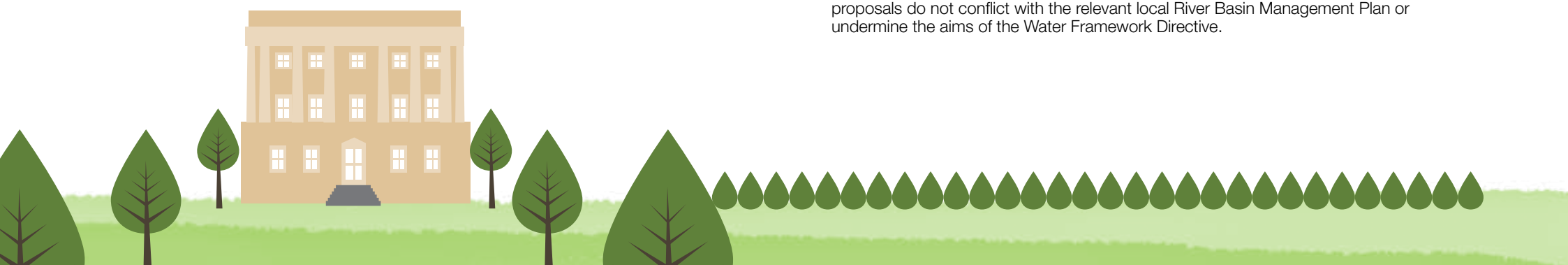
The Local Flood Risk Management Strategy action plan has been developed to set policy or process to reduce flood risk, prevent deterioration of the environment, and seek enhancement where possible. For example, in the 'Strategy Action Plan' measures Local Flood Risk Management Strategy – 3f is to "identify catchments where improved land management could reduce flood risk and/or improve the water environment. Implementation of this measures will reduce flood risk to communities and reduce diffuse pollution from runoff into watercourses. Another example is our planning policy in the Placemaking Plan about implementation of Sustainable Drainage Systems as part of new development, which will reduce flood risk, improve water quality, and deliver amenity benefits for local residents.

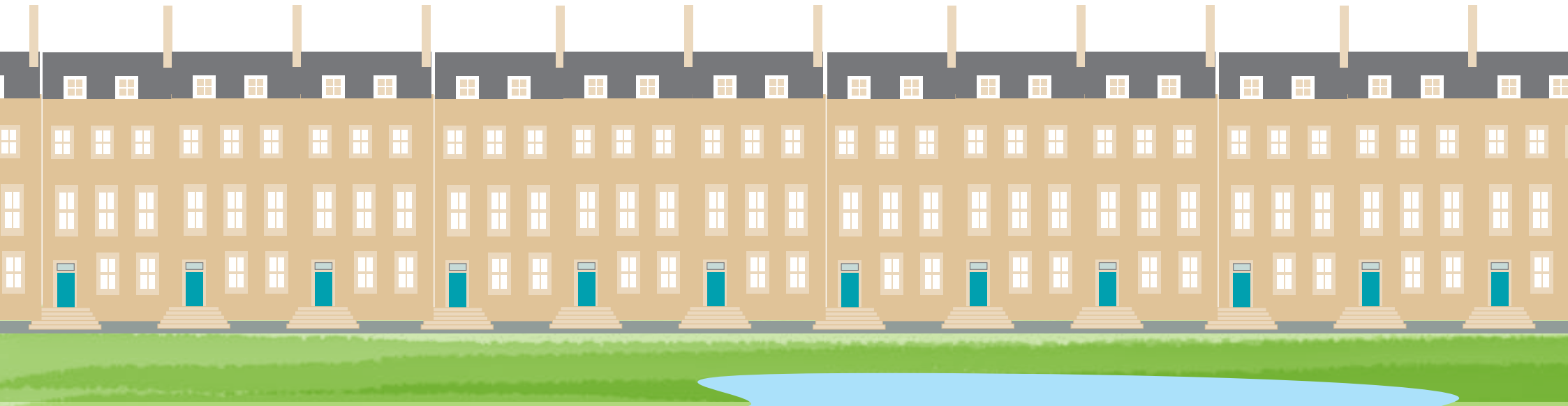
With respect to the Location Specific Action Plan the majority of actions are focused on improvements to highway drainage, inspections and/or investigations. These will have limited, if any, impact on the environment, although we will always undertake measures with consideration to the surrounding environment. Where location-specific actions identified in the regional Surface Water Management Plan or Local Flood Risk Management Strategy interact with a Main River or ordinary watercourse they will need to be subject to a Water Framework Directive assessment[20] during implementation.

Should larger schemes be identified and progressed these will be in line with planning controls, which will include consideration of environmental impact, and a screening opinion on the need for an Environmental Impact Assessment will be sought from the Local Planning Authority. It is also recognised that an environmental reporting procedure should and will be undertaken to ensure that the Council's duties under the relevant legislation are met.

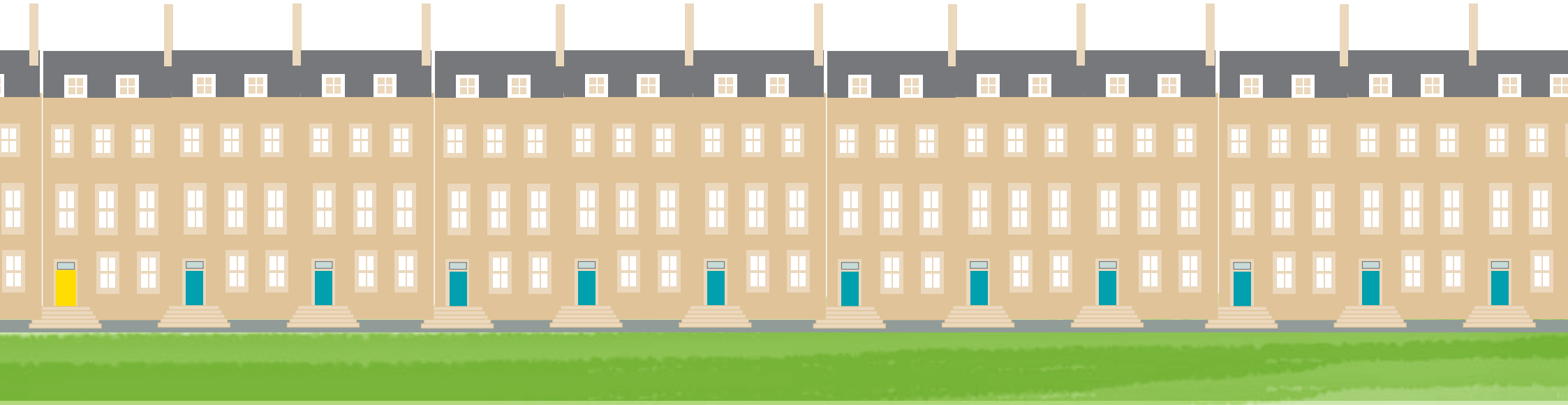
Further details on environmentally responsible flood risk management is available in the Strategic Environmental Assessment Environmental Report which is a separate document.

20 The requirements of the Water Framework Directive and actions to achieve Good Ecological Status need to be taken into account in the planning of all new activities, plans or strategies that could affect the water environment. Many of the aims of the Water Framework Directive are relevant to the preparation of local flood risk management schemes, and such schemes also may offer opportunities to help deliver some of the actions identified in relevant River Basin Management Plans. Therefore when we are proposing local flood risk management schemes as part of our Strategy, these schemes will be subject to a Water Framework Directive Assessment where they involve works to ordinary or main watercourses. This assessment will take account of the requirements of the Water Framework Directive and ensure that the scheme proposals do not conflict with the relevant local River Basin Management Plan or undermine the aims of the Water Framework Directive.





Section 6
Funding Strategy



Small drainage works can often be funded from Bath & North East Somerset Council's revenue and capital funding streams, but in a continued era of austerity the delivery of flood risk management infrastructure will require new ways of working and funding across different organisations and stakeholders. The Council may also seek to secure other dedicated flood risk management funding from Government[21] where a project is of sufficient magnitude to justify additional funding or it is likely to qualify for funding.

The introduction of partnership funding by the Department for Environment, Food and Rural Affairs in 2011 for flood and coastal erosion risk management projects means that the ability to leverage additional funding contributions could be the difference between a project going ahead or not. It may be possible for some projects to be fully funded by Flood and Coastal Erosion Risk Management Grant in Aid (which is the current partnership funding mechanism for capital works provided by the Department for Environment, Food and Rural Affairs). However, the majority are likely to require supplementary funding from a range of sources to make up the total sum needed.

To leverage additional funding will require relationships and the right timing. In addition tailoring the outputs or outcomes of flood risk management infrastructure is essential to attract a wider range of funding sources. For example, a flood storage area not only provides reduced flood risk, but creates wider benefits such as new amenity, biodiversity and recreation. These wider benefits are often key to unlocking additional funding from non-dedicated flood risk management sources (e.g. Heritage or Lottery Funding).

The following sections provide information on the approaches that will be taken to gain funding for both strategic and individual actions. Appendix E expands further on the full range of potential funding opportunities available. In addition the Department for Environment, Food and Rural Affairs has published a guide to "Partnership funding and collaborative delivery of local flood risk management"[22], intended to promote successful collaboration and partnership funding.

The development of the Strategic Flood Board, Operational Flood Working Group and the West of England Local Enterprise Partnership will assist the Lead Local Flood Authority in its ability to effectively communicate project needs to appropriate partners, whether local businesses or Risk Management Authorities, to identify funding needs for projects. The role of the Lead Local Flood Authority will be to ensure that proposed schemes are financially viable with respect to whole life costing, to identify who will be best placed to assist with funding or in kind contributions, and to work with partners to develop appropriate solutions to manage risks.

6.1 The 'Strategy' funding approach

Figure 6-1 and Figure 6-2 set out the funding sources and approaches for the actions outlined for the Council's Local Flood Risk Management Strategy. These separate the approach for funding of capital works (i.e. new infrastructure to reduce flood risk) and maintenance of existing infrastructure.

6.1.1 Funding capital works

Figure 6-1 outlines a hierarchical approach to access funding for capital works to alleviate flooding. The Lead Local Flood Authority will seek to secure dedicated funding from Flood and Coastal Erosion Risk Management Grant in Aid and Local Levy in the first instance (Tier 1) where a project is likely to qualify for funding. Refer to Appendix E for further details on these types of funding.

21 This could include Flood and Coastal Erosion Risk Management Grant in Aid funding from Central Government, or funding from the Regional Flood and Coastal Committee

22 http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=17085

To determine what funding is likely to be available through Flood and Coastal Erosion Risk Management Grant in Aid we will use Department for Environment, Food and Rural Affairs Partnership Funding Calculator to identify the amount that is likely to be available through this route and help the Lead Local Flood Authority to identify the size of the funding gap. The Lead Local Flood Authority will then engage with the Regional Flood and Coastal Committee to identify the likelihood of securing Local Levy. In the majority of cases funding from these sources will not be sufficient to fully fund a scheme (unless it scores >100% on the Department for Environment, Food and Rural Affairs Partnership Funding Calculator). It should be recognised that funding from this category is dependent on the benefits the scheme will provide (i.e. linked to Department for Environment, Food and Rural Affairs outcomes).

Flood and Coastal Erosion Risk Management Grant in Aid is provided by the Department for Environment, Food and Rural Affairs, but administered and managed by the Environment Agency.

Funding is unlikely to meet the full scheme costs in most cases, and approvals are subject to the consent of the Wessex Regional Flood and Coastal Committee.

Local Levy can be raised by the Wessex Regional Flood and Coastal Committee and used to support flood risk management projects that do not attract 100% national funding through Flood and Coastal Erosion Risk Management Grant-in-Aid.

Where a funding shortfall remains, the Lead Local Flood Authority will subsequently consider Tier 2 funding. This primarily considers economic growth and/or other direct beneficiaries of the proposed scheme, and may include:

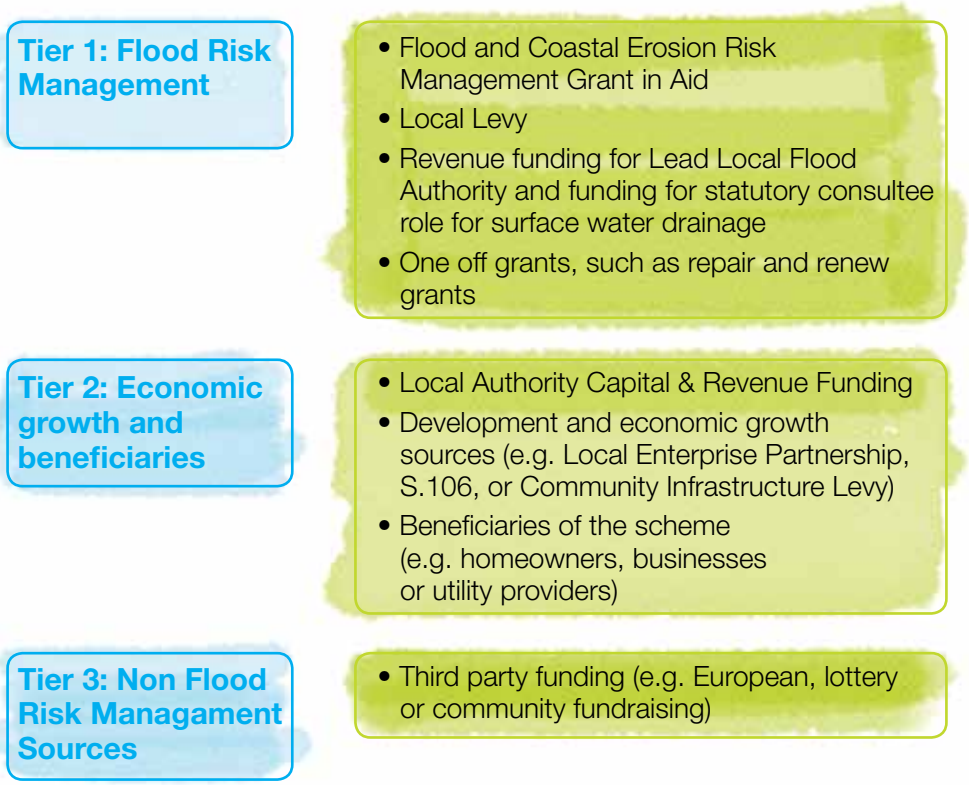
- Local authority contributions (either capital or revenue);
- West of England Local Enterprise Partnership where a scheme can directly contribute towards economic growth;
- Section 106 agreements can be used to support provision of infrastructure where they are directly related to development, necessary to make the development acceptable, and relevant to planning;
- Bath & North East Somerset Community Infrastructure Levy, and;
- Beneficiaries of the scheme (e.g. homeowners, businesses or utility providers).

For each capital scheme the Lead Local Flood Authority will identify the economic growth and development opportunities, and the potential beneficiaries. The Lead Local Flood Authority will also engage with relevant organisations early to identify potential funding, either as a contribution towards a Flood and Coastal Erosion Risk Management Grant in Aid application or a contribution outside of this process.

Tier 3 funding is from non-flood risk management sources. To access these will require thinking about the wider benefits such as biodiversity, amenity, health/wellbeing, recreation, and education. Sources could include Lottery funding, money raised by the community and from potential European Union funding sources.

Further explanation on these sources of funding is provided in Appendix E.

Figure 6-1 Options for funding of capital flood risk management works.



6.1.2 Funding maintenance of existing infrastructure

Most of the responsibility for funding of maintenance lies with the Risk Management Authority responsible for the asset (as explained in Section 3.3.2), but Riparian Owners (explained in Section 3.4.3) also have responsibilities for funding maintenance along watercourses which form part of the land they own.

As highlighted in Figure 6-2 this means that Wessex Water are responsible for funding maintenance of sewer network assets that they are responsible for. The money for this comes from the revenue they gain from charging their customers for the services they provide.

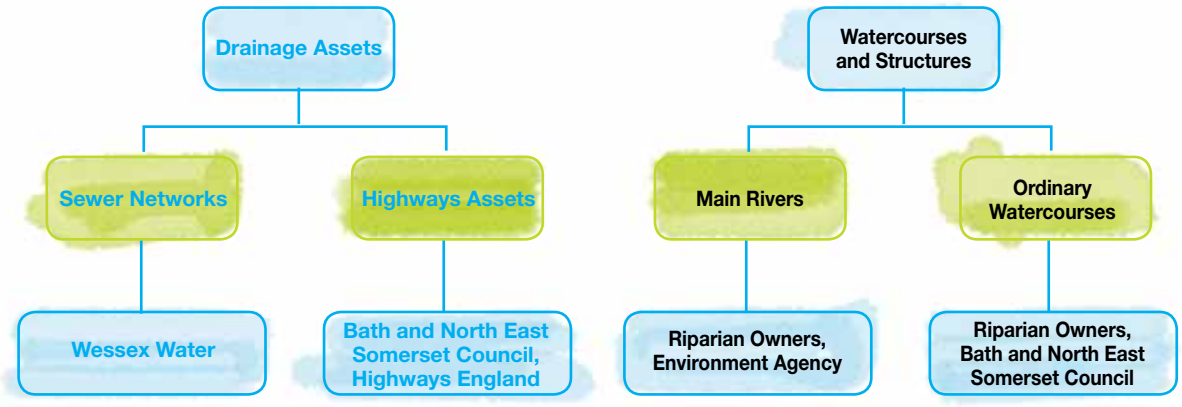
With respect to roads the responsibility for maintenance depends on the asset owner. Funding for maintenance of the assets we are responsible for comes predominantly from revenue through the Council's Settlement Funding Assessment and Council Tax. Funding for the Highways England comes via the Department for Transport.

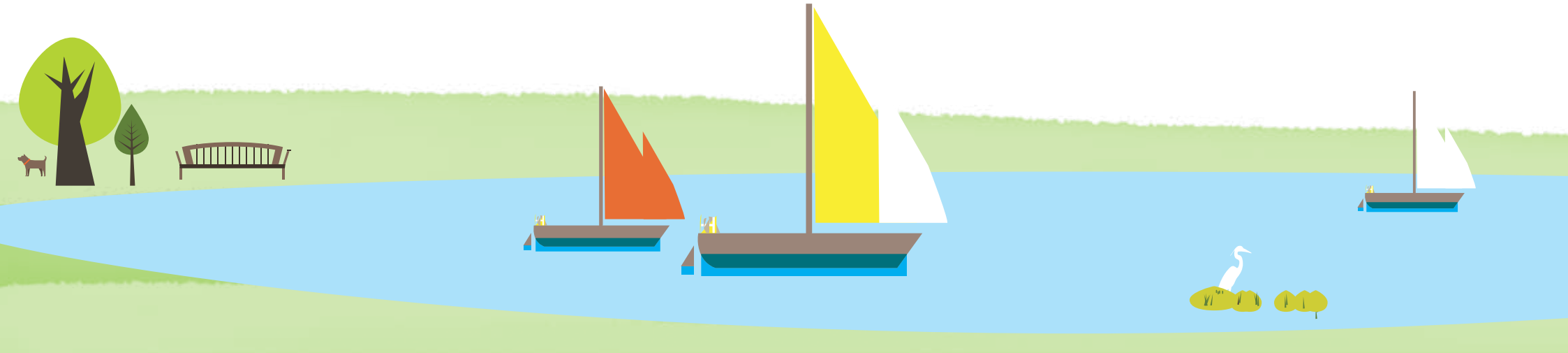
Maintenance of Main Rivers (and associated structures) is the responsibility of Riparian Owners and/or the Environment Agency, depending on ownership. In some cases the Environment Agency will undertake maintenance of Main Rivers which are under Riparian Ownership, using their permissive powers to manage flood risk under the Water Resources Act (1995). Funding for work undertaken by the Environment Agency comes from central government.

Similarly, maintenance of Ordinary Watercourses is the responsibility of Riparian Owners. Using permissive powers under the Land Drainage Act (1991) the Lead Local Flood Authority proactively maintain 37 reaches of ordinary watercourses and reactively maintain trash screens, to reduce property flood risk. Funding for the Council's maintenance work comes predominantly from revenue through our Settlement Funding Assessment and Council Tax. Riparian Owners will need to privately fund their own maintenance works.

The Council already compile a yearly maintenance and improvements programme to prioritise where efforts will be focused. This will continue to be undertaken, but using a risk based approach to ensure resources are allocated effectively. This will ensure there is a clearer approach to where the Council plan to focus its attention in the medium term.

Figure 6 2 Funding for maintenance of existing infrastructure





Section 7
Governance, Monitoring and Review

7.1 Governance for flood risk management

There is a governance arrangement in place to co-ordinate actions at an operational and strategic level, and ensure that these have appropriate scrutiny and accountability through our Flood Risk Scrutiny Panel, and Full Council. An overview of the governance arrangements for flood risk management, and the interfaces with stakeholders, is provided in Figure 7-1.

7.2 Monitoring

Monitoring, reviewing and updating the Local Flood Risk Management Strategy will be essential to ensure it continues to be 'fit for purpose'. It will also demonstrate success in delivering reduced flood risks to communities in Bath & North East Somerset.

The Lead Local Flood Authority will monitor the progress of the Local Flood Risk Management Strategy on an annual basis through preparation of the annual action plan, which will be presented to, and agreed by, the Strategic Flood Board. The annual action plan will identify:

- progress against the strategies objectives;
- whether measures have been delivered and can therefore be removed from the action plan;
- any changes to legislation or understanding of flood risk, and the implications of this, and;
- set the priorities for the forthcoming year.

The action plan will be published on the Bath & North East Somerset Council website.

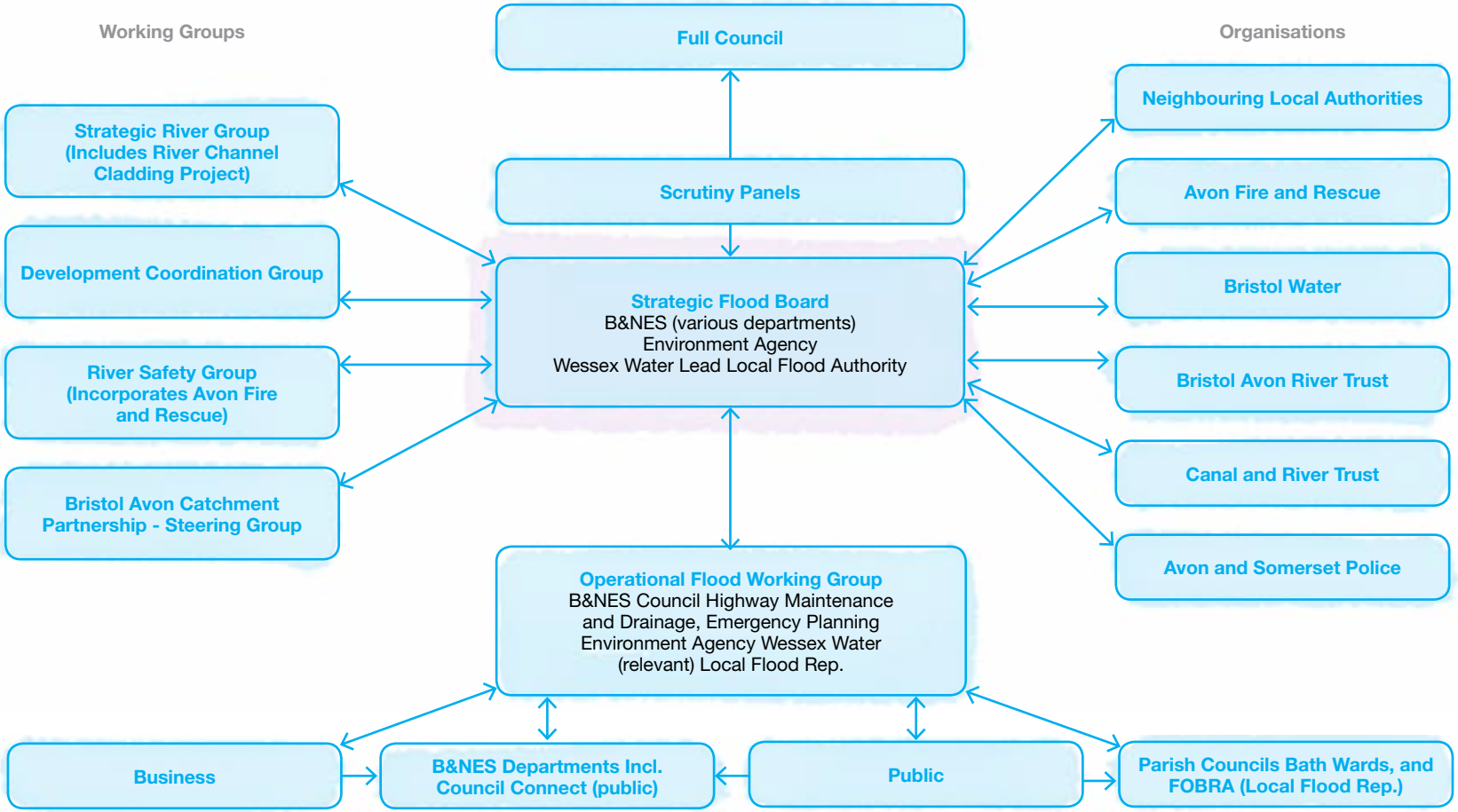
7.3 Review and Update

The Local Flood Risk Management Strategy will remain live for a ten year period to 2025, after which it will be reviewed and updated where necessary. A mid-term update of the Local Flood Risk Management Strategy will take place after five years, in 2020, to check progress against the strategies objectives and update the document where required. The update of the Local Flood Risk Management Strategy in 2020 will be reviewed by the Flood Risk Scrutiny Panel. Any significant changes to the Flood and Water Management Act (which is to be reviewed in 2017) which concern the duties of the Lead Local Flood Authority will be reflected in the 2020 review.

In the interim period the Local Flood Risk Management Strategy will only be updated if:

- it is not meeting its objectives as identified in the annual action plan;
- significant flooding occurs that causes the Lead Local Flood Authority to re-consider the risk assessment and prioritised locations;
- there are significant updates to datasets which underpin the risk assessment undertaken in the regional Surface Water Management Plan;
- there are regulatory, policy or legislative changes that affect the roles and responsibilities for flood risk management, or;
- there are changes to the funding landscape which affects our ability to meet the Local Flood Risk Management Strategy actions.

Figure 7-1 Governance for flood risk management



Appendix A
Policies, legislation, plans, assessments and strategies

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National legislation

The Flood and Water Management Act 2010

The Flood and Water Management Act (2010) brings together the recommendations of the Pitt report and previous policies to improve the management of water resources and create a more comprehensive and risk based regime for managing the risk of flooding from all sources. The Flood and Water Management Act states that its purpose is to "make provision about water, including provision about the management of risks in connection with flooding and coastal erosion". The key features of the Flood and Water Management Act in relation to flood and coastal risk management are that it provides:

- the Environment Agency a strategic overview role of all flood and coastal erosion risk management and re-affirms their responsibility as the lead authority for managing flood risk from Main Rivers, the Sea and reservoirs;
- unitary Authorities and County Councils a Lead Local Flood Authority role, allocating responsibility for managing flooding from surface runoff, groundwater and ordinary watercourses;
- an improved risk based approach to reservoir safety, and;
- a duty for relevant flood risk management authorities to co-operate and share information.

A key implication for County Councils and Unitary Authorities is the introduction of the Lead Local Flood Authority role, which enhances their responsibilities so that they lead the co-ordination of local flood risk management in their areas. However, partnership arrangements are in no way prevented, which will ensure full use of all capabilities and experience locally. In addition, the Flood and Water Management Act allows for all roles and actions to be delegated to another risk management authority (subject to agreement), with the exception of the Local Flood Risk Management Strategy, which must be developed by the Lead Local Flood Authority. The Flood and Water Management Act is available at http://www.legislation.gov.uk/ukpga/2010/29/contents.

To avoid administrative burdens, the Flood and Water Management Act does not require routine reporting on performance, but allows information to be requested where necessary. Local authorities can bring matters to the Government's attention and if a risk management authority fails to exercise a flood or coastal erosion risk management function, the Secretary of State can direct another authority to carry out that function. In addition, the Flood and Water Management Act enables Overview and Scrutiny Committees in Lead Local Flood Authorities to hold all the risk management authorities to account. In this way, the public can be actively involved in ensuring authorities perform and fulfil their responsibilities.

Under the Flood and Water Management Act a 'flood' is caused by heavy rainfall; a river overflowing its banks of being breached; a dam overflowing or being breached; tidal waters; groundwater; or anything else including a combination of factors. It does not include a flood caused from any part of a sewerage system, unless wholly or partly caused by an increase in the volume of rainwater (including snow and other precipitation) entering or otherwise affecting the system; or a flood caused by a burst water main.

Flood Risk Regulations 2009

The Flood Risk Regulations came in to force on 10th December 2009 and transposes the European Commission Floods Directive (Directive 2007/60/EC on the assessment and management of flood risks) into UK domestic law. The Flood Risk Regulations can be viewed at http://www.legislation.gov.uk/ukpga/2010/29/contents.

The Directive requires Member States to develop and update a series of tools for managing all sources of flood risk. The Flood Risk Regulations outline the roles and responsibilities of the various authorities consistent with the Flood and Water Management Act and provide for the delivery of the outputs required by the directive.

The Regulations give responsibility to:

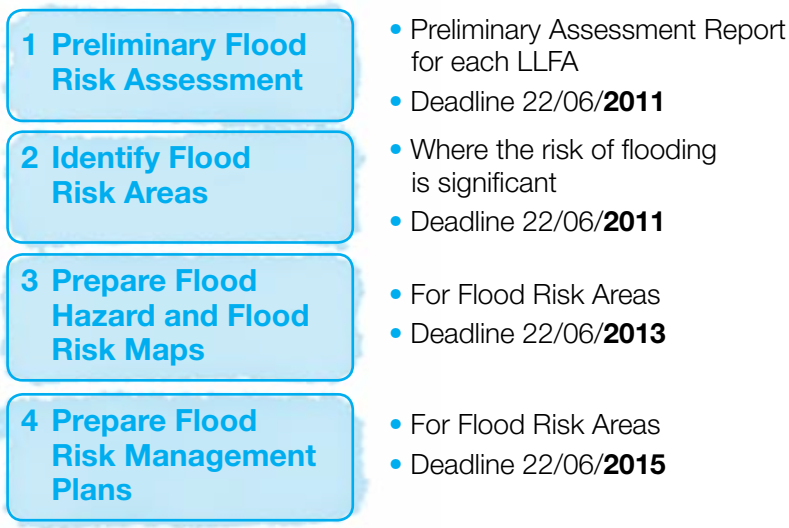
* the Environment Agency to prepare Directive deliverables: preliminary assessment report, flood risk maps and hazard maps and flood risk management plans for flood risk from the sea, main rivers and reservoirs;

* Lead Local Flood Authorities to do the same for 'local flood risk', which includes surface runoff, groundwater and ordinary watercourses, and;

* the Environment Agency for collating and publishing the preliminary assessment reports, flood risk maps and hazard maps, and flood risk management plans.

The stages of the Flood Risk Regulations are illustrated in Figure 1. The Flood Risk Regulations operate on a six yearly cycle; therefore an updated version of the Preliminary Flood Risk Assessment will be prepared in 2017. The Preliminary Flood Risk Assessment is a high level screening exercise to identify areas of most significant flood risk across Europe. The aim of the Preliminary Flood Risk Assessment is to assess local flood risk with respect to past floods and the potential harmful consequences of future floods.

Figure 1 Flood Risk Regulations process (taken from Environment Agency guidance)



Land Drainage Act 1991

The Land Drainage Act (1991) outlines the duties and powers to manage land drainage for a number of bodies including the Environment Agency, Internal Drainage Boards, local authorities, navigation authorities and riparian owners. A number of its provisions have been re-defined following the Flood and Water Management Act, in particular the provisions on consenting and enforcement on ordinary watercourses. As a result Bath & North East Somerset Council is now responsible for administering and issuing consents to third parties for undertaking works which could affect ordinary watercourses, and enforcing where works have been undertaken without the necessary consent, under Sections 23, 24 and 25 of the Act.

Water Framework Directive

The Water Framework Directive is the most substantial piece of European Commission water legislation to date and is designed to improve and integrate the way water bodies are managed throughout Europe. It came into force on 22 December 2000 and was transposed into UK law in 2003. Member States must aim to reach good chemical and ecological status in inland and coastal waters by 2015. It is designed to:

- prevent deterioration in the classification status of aquatic ecosystems, protect them and improve the ecological condition of waters;
- achieve at least good status for all waters. Where this is not possible, good status should be achieved by 2021 or 2027;
- promote sustainable use of water as a natural resource;
- conserve habitats and species that depend directly on water;
- progressively reduce or phase out releases of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants, and;
- contribute to mitigating the effects of floods and droughts.

In essence, the Water Framework Directive establishes new and better ways of protecting and improving rivers, lakes, groundwater, transitional (where freshwater and sea water mix) and coastal waters. To address this, the Environment Agency has embarked on river basin management planning with the aim to develop new and better ways of protecting and improving the water environment. It should be noted that the objectives referred to above and contained in the Water Framework Directive, whilst supported in the Bath & North East Somerset Local Flood Risk Management Strategy, are considered outside the scope of this Strategy. Nevertheless it is important that measures to manage local flood risk does not cause deterioration of water bodies and considers opportunities to improve water bodies in conjunction with local flood risk management.

River Basin Management Plans have been produced by the Environment Agency for the eleven river basin districts in England and Wales and are the central tool setting out the objectives and actions required to achieve the objectives of the Water Framework Directive. River Basin Management Plans describe the main issues for each river basin district and state the environmental objectives for the basin, explain the objectives selected to achieve good ecological status and summarise the actions needed to deliver those objectives. A River Basin District is: a river basin, or several river basins, and the river basin's adjacent coastal waters. The Severn River Basin District River Basin Management Plan[1] covers the Bath & North East Somerset Council boundary, and within the area there are 239 artificial or heavily modified water bodies and 633 natural water bodies. As of 2009 when the Plan was published, only 29% of these were meeting good ecological status. At least 75% of the 40 groundwater bodies were however achieving good status. As a requirement of the Water Framework Directive all 912 water bodies will need to meet good or high ecological status or potential by 2027.

1 The Severn River Basin Management Plan is available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/291442/gemi0910bssk-e-e.pdf

Climate Change Act

The Climate Change Act (2008) requires a UK wide climate change risk assessment every five years, accompanied by a national adaptation programme that is also reviewed every five years. The Act has given the Government powers to require public bodies and statutory organisations such as water companies to report on how they are adapting to climate change.

Conservation of Habitats and Species Regulations

The Conservation of Habitats and Species Regulations (2010) transpose the Habitats Directive into UK law. The regulations aim to help maintain and enhance biodiversity throughout the European Union, by conserving natural habitats, flora and fauna. The main way it does this is by establishing a coherent network of protected areas and strict protection measures for particularly rare and threatened species.

Civil Contingencies Act

The Civil Contingencies Act (2004) is legislation that aims to deliver a single framework for civil protection in the UK and sets out the actions that need to be taken in the event of a flood. The Civil Contingencies Act is separated into two substantive parts: local arrangements for civil protection (Part 1) and emergency powers (Part 2).

Strategic Environmental Assessment Directive

The Strategic Environmental Assessment Directive (2001) (European Commission Directive 2001/42/EC) is legislation which aims to increase the consideration of environmental issues during decision making related to strategic documents such as plans, programmes or strategies. The Strategic Environmental Assessment identifies the significant environmental effects that are likely to result due to the implementation of a plan, programme or strategy. A Strategic Environmental Assessment has been prepared in parallel to the development of the Bath & North East Somerset Local Flood Risk Management Strategy.

National Flood and Coastal Erosion Risk Management Strategy

The National Flood and Coastal Erosion Risk Management Strategy[2] was produced to ensure that government, the Environment Agency, local authorities, water companies, internal drainage boards and other organisations that have a role in flood and coastal erosion risk management understand each other's roles. It also encourages them to work together to:

- understand the risks;
- manage the likelihood;
- help people to manage their own risk;
- prevent inappropriate development, and;
- Improve flood prediction, warning and post flood recovery.

This Flood and Coastal Erosion Risk Management Strategy fulfils a requirement in the Flood and Water Management Act (2010), which gave the Environment Agency a 'strategic overview' of flood and coastal erosion risk management and in turn takes forward a recommendation from Sir Michael Pitt's inquiry into the 2007 floods.

National Planning Policy Framework

The National Planning Policy Framework[3] sets out the Government's planning policies for England and was produced to help ensure sustainable development can be achieved. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities. Within the National Planning Policy Framework it states that local plans should take account of climate change over the longer term, including factors such as flood risk by:

- applying the Sequential Test, and if necessary the Exception Test;
- safeguarding land from development that is required for current and future flood management;
- using opportunities offered by new development to reduce the causes and impacts of flooding;
- seeking opportunities to facilitate the relocation of development, including housing, to more sustainable locations where climate change is expected to increase flood risk so that existing development may not be sustainable in the long-term;
- ensuring the most vulnerable new development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location, and;
- ensuring development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning, and it gives priority to the use of sustainable drainage systems.

It also states local planning authorities should ensure flood risk is not increased elsewhere and only consider development appropriate in areas at risk of flooding where, informed by a site-specific flood risk assessment following the Sequential Test, and if required the Exception Test, it can be demonstrated that:

- the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location, and;
- development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning; and it gives priority to the use of sustainable drainage systems.

2 The FCERMS is available at: http://nationalfloodforum.org.uk/wp-content/uploads/EA-National-Strategy-flooding-and-coastal-erosion-risk-management-summary.pdf

3 The National Planning Policy Framework is available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

Plans, Assessments and Strategies undertaken locally by Risk Management Authorities

Preliminary Flood Risk Assessment

Bath & North East Somerset Council produced its Preliminary Flood Risk Assessment[4] in 2011. The Preliminary Flood Risk Assessment provides a high level overview of local flooding within Bath and North East Somerset, considering both past flooding and potential future flooding. In order to do this the Preliminary Flood Risk Assessment used Environment Agency Flood Risk Maps and gathered records of historic flooding. The historical flooding information was combined into a single database using records held by the council's land drainage and highways drainage departments, Wessex Water, the Environment Agency and information from Parish Councils.

In England the Department for Environment, Food and Rural Affairs and the Environment Agency have identified the 'Flood Risk Areas' on a national basis. This has been done by identifying locations where there are clusters of 30,000 or more people predicted to be vulnerable to surface water flooding. There are ten 'Flood Risk Areas' in England. No standalone indicative Flood Risk Areas fall within the Bath and North East Somerset area. The closest Indicative Flood Risk Area to Bath and North East Somerset is that of Bristol. A relatively small portion of this area (1.5%) falls within Bath and North East Somerset administrative boundary. Discussions with Bristol City Council have resulted in the agreement that they will take the lead in reviewing this indicative flood risk area on the basis that the selected location falls predominantly within their administrative boundary.

4 The Bath & North Somerset PFRA is available from: HTTP://WEBARCHIVE.NATIONALARCHIVES.GOV.UK/20140328084622/HTTP://CDN.ENVIRONMENT-AGENCY.GOV.UK/FLHO1211BVPL-E-E.PDF

Strategic Flood Risk Assessments

Strategic Flood Risk Assessments are tools used by a planning authority to assess flood risk for spatial planning, producing development briefs, setting constraints, informing sustainability appraisals and identifying locations of emergency planning measures and requirements for flood risk assessments. The purpose of a Strategic Flood Risk Assessment is to assess and map all forms of flood risk from groundwater, surface water, impounded water bodies, sewer and river sources, taking into account future climate change predictions, to allow planning authorities to use this as an evidence base to locate future development primarily in low flood risk areas. The outputs from a Strategic Flood Risk Assessment also assist in the production of sustainable policies for the long-term management of flood risk.

In 2008 the Level 1 Strategic Flood Risk Assessment was produced for Bath & North East Somerset Council. The Strategic Flood Risk Assessment provides an overview of flood risk within Bath & North East Somerset using historical flooding records gathered from the Environment Agency and Bath & North East Somerset Council, Parish Councils, Wessex Water and local residents. This was supported by the use of mapping products provided by the Environment Agency outlining modelled flood extents and locations of flood defences. The SFRA was designed provide the information required through the planning process so that land is allocated for development in low risk flood areas first.

Following the Level 1 Strategic Flood Risk Assessment, Level 2 Strategic Flood Risk Assessments[5] were produced to focus on areas considered to be at higher potential risk from flooding as a result of conclusions in the Level 1 report. These Level 2 Strategic Flood Risk Assessments covered three areas:

- Bath;
- Keynsham, and;
- Midsomer Norton/ Radstock.

As part of these Level 2 Strategic Flood Risk Assessments sequential tests and a scoping studies for flood risk management strategies were undertaken.

5 The level 1 & 2 SFRAs can be accessed from the Bath & North East Somerset Council website at: HTTP://WWW.BATHNES.GOV.UK/SERVICES/PLANNING-AND-BUILDING-CONTROL/PLANNING-POLICY/EVIDENCE-BASE/FLOOD-RISK

Flood Risk Management Strategy

Following on from the Level 2 Strategic Flood Risk Assessment a Flood Risk Management Strategy was prepared for Bath & North East Somerset. This provides strategic options for the management of flood risk in areas prioritised in the SFRA, namely, Bath[6], Keynsham, Midsomer Norton and Radstock. This Flood Risk Management Strategy sits alongside the Council's Local Development Framework and provides guidance and advice on flood risk management and sustainable urban drainage systems.

Surface Water Management Plans

Bath & North East Somerset Council has completed a regional Surface Water Management Plan. Surface Water Management Plans are described as a framework through which key local partners with a responsibility for surface water and drainage in their area work together to understand the causes of surface water flooding and agree the most cost effective way of managing that risk. The purpose is to make sustainable surface water management decisions that are evidence based, risk based, future proofed and inclusive of stakeholder views. A Surface Water Management Plan establishes a long-term action plan to manage surface water in an area and should influence future capital investment, drainage maintenance, public engagement and understanding, land-use planning, emergency planning and future developments.

The regional Surface Water Management Plan was undertaken in order to be used as an overarching framework to assist with the identification and management of flood risk from surface water within Bath & North East Somerset. To understand the flood risk, data was collated and scored according to its quality from Bath & North East Somerset Council records and those of project partners including the Environment Agency and Wessex Water. Source-Pathway-Receptor modelling was then applied, and the data mapped to identify key flooding locations which are referred to as 'wet spots'. Based on the overall findings of the regional Surface Water Management Plan a Strategic and Operational Action Plan was developed which identified actions which can be applied in general to address flood risk. Using the flood history data, a location specific Action Plan was developed to summaries actions required in wet spot areas. The actions from both of these action plans have now been incorporated into the Local Flood Risk Management Strategy, see Section 5 of the main Local Flood Risk Management Strategy for further details.

Catchment Flood Management Plans

Catchment Flood Management Plans have been produced by the Environment Agency and are high-level planning tools that set out objectives for flood risk management for each river catchment and estuary. They also identify flood risk management policies that are economically practical, have a potential life of 50 to 100 years, and will help partnership working to put them in place. Catchment Flood Management Plans consider inland risk from rivers, surface water, groundwater and tidal flooding but do not consider sewer flooding. The Bristol Avon Catchment Flood Management Plan covers Bath and North East Somerset[7] as three sub-areas and each has preferred policy options identified to manage the risks most relevant to each area.

In the sub-area of Bath policy option 5 is outlined as the preferred option to take further action to reduce flood risk. Under this it is proposed that action will be taken through carrying out improvements to existing assets below standard; identifying an overall strategy for the future protection of the city; increasing awareness of risk and response to flood warning developed for area; and discouraging inappropriate development.

In the Lower Avon sub-area the preferred option is policy option 3 which means managing existing flood risk effectively. To do this it is proposed that a System Asset Management Plan be developed; investigation be undertaken to understand the cost efficiency of existing asset maintenance in areas such as Bathford, Swineford and Batheaston; and recommended improvements as a result of the above be implemented.

In the sub-area of Mendip Slopes and Long Ashton the preferred option is policy option 4 as it is believed that flood risk is already being managed effectively, but that further action is needed to keep pace with climate change.

6 Bath & North East Somerset Council is currently in the process of undertaking a flood risk study or Weston (Bath) which is expected to be completed in June 2015.

7 The Bristol Avon CFMP is available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/294182/Bristol_Avon_Catchment_Flood_Management_Plan.pdf

To implement the preferred policy option it is proposed that actions will include reviewing emergency contingency planning; increasing awareness of risk and response to flood warnings; discourage inappropriate development; and investigate the benefits of improved flood forecasting and warnings.

Core Strategy

Adopted in July 2014, the Bath & North East Somerset Core Strategy[8] is one of the main planning document for Bath & North East Somerset Council. It sets out the Council's vision and objectives and translates them into a deliverable plan from now up to 2029.

The key policy relating to flood risk management within the Core Strategy is CP5: Flood Risk Management. This outlines Development in the District will follow a sequential approach to flood risk management, avoiding inappropriate development in areas at risk of flooding and directing development away from areas at highest risk in line with Government policy (i.e. National Planning Policy Framework). Any development in areas at risk of flooding will be expected to be made safe throughout its lifetime, by incorporating mitigation measures, which may take the form of on-site flood defence works and / or a contribution towards or a commitment to undertake such off-site measures as may be necessary. All development will be expected to incorporate sustainable drainage systems to reduce surface water run-off and minimise its contribution to flood risks elsewhere. All development should be informed by the information and recommendations of the Bath & North East Somerset's Strategic Flood Risk Assessments and Flood Risk Management Strategy.

Other policies within the Core Strategy which relate to flood risk management include:

- CP2: Sustainable Construction: which states that all planning applications should, almost others, minimise the vulnerability to flooding and give consideration of climate change adaptation.
- CP7: Green infrastructure: which seeks to maintain, protect and enhance green infrastructure as an integral part of creating sustainable communities.

8 The Bath & North East Somerset Core Strategy is available at: http://www.bathnes.gov.uk/services/planning-and-building-control/planning-policy/core-strategy-examination

Strategic Environmental Assessment

Under the Strategic Environmental Assessment Directive, a Strategic Environmental Assessment is required to accompany the Bath & North East Somerset Local Flood Risk Management Strategy. This identifies any potentially significant environmental effects arising from the implementation of the Local Flood Risk Management Strategy so that their impact can be mitigated. It considered effects on water, flooding, population, human health, biodiversity, the landscape, climatic factors, material assets, cultural heritage and air quality.

Appendix B
Statement of stakeholder engagement

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Introduction

This Statement of stakeholder engagement summarises the consultation activities that have been undertaken to help shape the Bath & North East Somerset's Local Flood Risk Management Strategy.

It provides an overview of the 5 key stages of work:

- stage 1 – development of a stakeholder engagement plan (2014);
- stage 2 - set up of the Strategic Flood Board, Operational Flood Working Group and Local Flood Representatives (2014);
- stage 3 – stakeholder updates/briefing notes;
- stage 4 – stakeholder workshop (June 2015), and;
- stage 5 – formal public consultation (September and October 2015).

Context

Bath & North East Somerset Council has a duty to undertake consultation on the Local Flood Risk Management Strategy. The Flood and Water Management Act 2010 states (in Section 9) that:

"A lead local flood authority must consult the following about its local flood risk management strategy — (a) risk management authorities that may be affected by the strategy (including risk management authorities in Wales), and (b) the public."

In preparing the draft Local Flood Risk Management Strategy the Council has undertaken engagement in order to meet, and hopefully exceed, this requirement for consultation.

The Act does not specify how or when consultation should take place. The steps taken have therefore followed good practice to develop an overall engagement strategy which is embedded within and clearly influences the Local Flood Risk Management Strategy development process.

The approach has taken account of the guidance set out in the Council's Statement of Community Involvement, the Parish Charter, and the messages contained within the Local Government Association document 'Framework to Assist the Development of the Local Strategy for Flood Risk Management' (Nov, 2011).

Overall the consultation approach has been based on a combination of:

- informal engagement - undertaken in parallel to the preparation of the draft Local Flood Risk Management Strategy which has helped to inform the documents which are now out for public consultation;
- formal engagement – which, through the current consultation, will invite feedback on the published draft version of the Local Flood Risk Management Strategy, and;
- ongoing technical discussions.

Objectives

Engagement on the Local Flood Risk Management Strategy has aimed to help:

- improve understanding of current and future local flood risk across Bath & North East Somerset;
- improve understanding of who is responsible for dealing with different types of flooding;
- encourage individuals and communities to understand their own responsibilities and be more aware of the range of actions that they can take themselves to address flooding;
- manage expectations (in terms of what can be done to address flood risk);
- create positive engagement, through which a wide range of ideas about flooding can be understood and fed into the strategy;
- share data and ensure that the data used to underpin the Local Flood Risk Management Strategy is as accurate as possible - ensuring that best use is made of local knowledge;
- maintain close liaison with flood risk management partners and pave the way for a smooth working relationship with them going forward;
- build awareness and positive support for the way in which the Council intend to manage local flooding going forward, and;
- ensure ultimately that the final Local Flood Risk Management Strategy can be readily supported and adopted by the Council's Cabinet.

Key messages

There are a number of key messages that the stakeholder engagement and communication work undertaken has aimed to clearly and consistently convey, including the following.

- Bath & North East Somerset Council, as Lead Local Flood Authority, now has a responsibility to work with local partners to better manage local flooding.
- The Council's responsibility, and the focus of the Local Flood Risk Management Strategy, is on the management of local flooding. This includes flooding from surface runoff, groundwater and ordinary watercourses (small streams and rivers). The council will continue to work with the Environment Agency, who remain responsible for flooding from main rivers.
- It is not economically, technically, socially or environmentally feasible to wholly prevent flooding. However, we can reduce and mitigate the impacts of flooding through good planning and management and effective investment.
- Local communities have a key role to play and will themselves need to take action to help mitigate and manage local flood risk.

Stage 1

Development of a stakeholder engagement plan

At the start of the project, a stakeholder engagement plan was drawn up. This identified who would need to be consulted, how and when.

The stakeholder engagement plan recognised that successful delivery of the Local Flood Risk Management Strategy would require close working with a range of internal partners in various departments across the Council as well as with a number of key external partners. It also set out a consultation timeline, which was then evolved as the project progressed. The key activities mapped out in the timeline were:

- internal meetings with representatives from other Bath & North East Somerset Council departments;
- preparation of regular update sheets/newsletters which were distributed to stakeholders;
- a stakeholder workshop;
- a formal consultation, supported by publicity;
- iterative feedback, with the Local Flood Risk Management Strategy documents being updated to take account of comments raised, and;
- involvement of the Council's overview and scrutiny panel.

Stage 2

Set up of the Strategic Flood Board, Operational Flood Working Group and Local Flood Reps

At an early stage in the development of the Local Flood Risk Management Strategy the Council set up an overarching process of governance to apply to all of its duties as Lead Local Flood Authority.

A Strategic Flood Board was set up. This includes representatives from the Council, as well as the Environment Agency, Wessex Water, Bristol Water and the Canals and Rivers Trust. In addition, an Operational Flood Working Group has been set up. Going forwards this will discuss specific flooding or drainage issues with a view to coming up with practical measures to improve drainage or reduce flood risk. Both the Strategic Flood Board and the Operational Working Group have been involved in developing the Local Flood Risk Management Strategy from an early stage.

A network of Local Flood Representatives based in many of the Parishes has also been set up to act as an intermediary between the Council and the community and will feed information directly to the Operational Flood Working Group.

Stage 3

Stakeholder updates/briefing notes

At key stages throughout the project update sheets were prepared and circulated to key stakeholders. These gave information about the emerging objectives and the tasks undertaken and were also used to advertise the consultation.

Stage 4

Stakeholder workshop

The key phase of consultation focused around a stakeholder workshop. This was held on 17th June 2015. A wide range of stakeholders were invited to attend including:

- members of the Strategic Flood Board, Cabinet Members and Local Ward Councillors;
- representatives from Bath & North East Somerset Council as planning authority and highways authority and in relation to building control, emergency planning;
- Canals and River Trust;
- English Heritage;
- Environment Agency;
- Natural England;
- Wessex Water;
- Emergency Services (including Ambulance Civil Contingencies Unit, Avon Fire and Rescue and Avon and Somerset Constabulary);
- neighboring authorities (Bristol, Wiltshire, North Somerset and South Gloucestershire);
- residents associations;
- Town and Parish Councils;
- Chamber/s of Commerce;
- Network Rail;
- local bus and train operating companies;
- cycling groups (including Sustrans and Cycle Bath);
- river and flooding groups (including the Broadmead Lane Industrial Estate, Kennet and Avon Canal Trust, Chew Valley Flood Forum. River Corridor Group);
- wildlife and nature groups (including the Avon Wildlife Trust, Forest of Avon Trust, West of England Nature Partnership and RSPB);
- heritage groups (including Bath Preservation trust and Bath Heritage Watchdog);
- land owners, and;
- the Met office.

The session was attended by over 30 stakeholders from a wide cross section of backgrounds and disciplines.

The workshop comprised of a:

- briefing on the role of the Council as LLFA, the background and context for the Local Flood Risk Management Strategy and the Local Flood Risk Management Strategy objectives;
- more detailed presentation on the results of the Surface Water Management Plan (SWMP) and how these have been fed into the Local Flood Risk Management Strategy as well as on the Local Flood Risk Management Strategy Action Plan, and;
- break out session which gave attendees the opportunity to discuss the Local Flood Risk Management Strategy objectives and Action Plan in more detail.

A detailed summary of the workshop was produced and is available, on request, as a separate document. This documents all the comments and queries raised and shows how each has been responded to.

As a result of the workshop a number of changes were made to the emerging draft Local Flood Risk Management Strategy documents. The version that is currently out for consultation therefore incorporates these amendments. A summary of these amendments is presented below:

- The key feeling at the workshop was that raising awareness of flooding and of responsibilities for flooding was critical and that the Local Flood Risk Management Strategy should address this. The stakeholders felt strongly that encouraging individuals, communities and businesses to be aware of and manage their own flood risks was paramount, and that providing the right people with the right tools was key to doing this.

  Action taken – The Local Flood Risk Management Strategy documents were amended to give greater emphasis to these issues.

- Stakeholders also expressed an opinion that the Local Flood Risk Management Strategy should reflect the stages of a flood – i.e. manage, plan, warn/respond.

  Action taken – a diagram was added to show how the Local Flood Risk Management Strategy objectives relate to the various stages of a flood.

- Stakeholders were keen to ensure that the Local Flood Risk Management Strategy took account of natural springs that can appear after heavy rain.

  Action taken – reference to this was added to the draft Local Flood Risk Management Strategy by outlining that flooding from natural springs would be considered as groundwater flooding.

- Stakeholders were keen to ensure that the Council continues to work in partnership with neighbouring authorities and that information should be freely shared between and within organisations.

  Action taken – actions about partnership working and sharing information have been added.

- The stakeholders felt that, at present, it is difficult to advise the public correctly about the actions to take when a flood occurs.

  Action taken – the Local Flood Risk Management Strategy now includes a section on who to report flooding to, and links to Environment Agency guidance (on the Gov.uk website) about preparing for a flood and what to do during a flood event.

- Stakeholders felt that maintenance and clearance works to culverts and watercourses should be prioritized.

  Action taken – an action has been added.

- Stakeholders felt that the wording of an action ‘Support communities to manage their flood risks was misleading’

  Action taken – this action has been rephrased for clarity.

- Stakeholders felt strongly that communities should be empowered to take control of local issues.

  Action taken – action added.

Stage 5

Formal public consultation

The current consultation forms the 5th stage of engagement. The Local Flood Risk Management Strategy has been made available online and in libraries and one-stop-shops. A questionnaire is available on line, or via hard copy, to capture comments. When the consultation closes all the feedback will be reviewed and, where appropriate comments will be used to help shape the final version of the Local Flood Risk Management Strategy. This section of this Appendix will be updated at that stage and will document the key comments raised and the actions that have been taken in response.

Appendix C
Roles and responsibilities of Risk Management Authorities

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Powers and duties of Risk Management Authorities 98

Introduction

The Risk Management Authorities identified under the Flood and Water Management Act 2010 (section 6, part 13) are:

- a Lead Local Flood Authority;
- the Environment Agency;
- a district council for an area for which there is no unitary authority;
- an internal drainage board;
- a water and sewerage company, and;
- a highway authority.

These organisations have a duty under the Flood and Water Management Act to act consistently with (or in the case of a water company to have regard to) the Local Flood Risk Management Strategy. They are required to co-operate with each other and share information in the exercise of their flood and coastal erosion risk management functions. They are also able to delegate flood and coastal erosion functions to each other by mutual consent (except for the Local Flood Risk Management Strategy which Bath & North East Somerset cannot delegate).

In the case of Bath & North East Somerset the Risk Management Authorities are:

- Bath & North East Somerset, as the Lead Local Flood Authority, Local Highways Authority, Local Planning Authority, and Emergency Planning Authority;
- the Environment Agency;
- Wessex Water;
- Bristol Water (noting that burst water mains are excluded from flooding in the Flood and Water Management Act), and;
- Highways England.

The Lead Local Flood Authority have established a number of working groups which enable partnership working with other organisations and Risk Management Authorities. These include the Strategic Flood Board and Operational Flood Working Group, which hold regular meetings. The Strategic Flood Board provides oversight and partnership working for flood risk management in Bath and North East Somerset. The purpose of the Operational Flood Working Group is to discuss and agree ways to manage flood risk from local sources.

The Lead Local Flood Authority also attend meetings with the South West Flood Risk Managers and West of England Flood Risk Working Groups which aids communication with other Lead Local Flood Authorities in the South West of England.

Powers and duties of Risk Management Authorities

Table C-1 provides an overview of the powers and duties of each Risk Management Authority, with respect to flood risk management.

Table C-1 Roles, duties powers and responsibilities of Risk Management Authorities

Risk Management Authority	Overview of role	Duties, powers and responsibilities
Bath & North East Somerset Council , as Lead Local Flood Authority	Lead Local Flood Authority, responsible for managing and coordinating local flood risk management;	**Duties:** • develop, maintain, apply and monitor a Local Flood Risk Management Strategy, which is consistent the national flood and coastal erosion management strategy; • act consistently with the Local Flood Risk Management Strategy and national flood and coastal erosion management strategy; • upon becoming aware of a flood, the Lead Local Flood Authority must, to the extent is considers necessary or appropriate, investigate which authority has flood risk management responsibilities and whether that authority has or is proposing to exercise those function; • co-operate with risk management authorities for the purposes of managing flood or coastal erosion risk; • maintain a register of structures or features which are considered to significantly affect flood risk; • responsible for consenting third party works on ordinary watercourses; • statutory consultee for surface water drainage proposals for major[1] planning applications, and; • contribute towards achievement of sustainable development; **Powers:** • to do works to manage flood risks from surface runoff and groundwater; • designate structures and features that affect flooding; • request information from any person with respect to flood and coastal erosion; • sanction persons who do not provide information following a request for information; • enforcement where works have been completed without a necessary consent for all districts/ boroughs, and; • enforcement to maintain a proper flow on ordinary watercourses. **Other:** • management and co-ordination of local flood risk, bringing together all relevant bodies to help manage local flood risk

1 Major development is defined as: a) Winning and working of mineral or the use of land for mineral working deposits, b) Waste development, c) The provision of dwellings where: i. The number of dwellings is 10 or more, ii. The site has an area of 0.5 hectares or greater, d) The provision of a building or buildings where the floor space to be created by the development is 1,000 square meters or more, or, e) A development carried out on a site having an area of 1 hectare of more. This is as defined in Article 2(1) of the Town and Country Planning (Development Management Procedure) (England) Order 2010.

Table C-1 Roles, duties powers and responsibilities of Risk Management Authorities

Risk Management Authority	Overview of role	Duties, powers and responsibilities
Bath & North East Somerset Council, as the Local Highways Authority[2]	Responsible for highway drainage and roadside ditches	**Duties:** • responsible for the provision and management of highway drainage and roadside ditches under the Highways Act (1980). This excludes the roads that are the responsibility of the Highways Agency; • contribute towards achievement of sustainable development, and; • statutory consultee where a development proposal is likely to affect a local highway.
Bath & North East Somerset Council, as the Local Planning Authority[3]	Responsible for plan making and decision taking for new development	**Duties:** • preparing a Local Plan for development; • considering flood risk assessments submitted in support of applications, and; • determination of planning applications, giving consideration for flood risk within the region. **Other:** • working closely with the Drainage and Flooding team (who undertake most of the duties of the Lead Local Flood Authority) to ensure that planning applications take adequate account of drainage requirements.
Bath & North East Somerset Council, as the Emergency Planning Authority	Prepare for, and respond to emergencies, including flooding	**Duties:** • assess the risk of emergencies occurring and use this to inform contingency planning; • put in place emergency plans; • put in place business continuity management arrangements; • put in place arrangements to make information available to the public about civil protection matters and maintain arrangements to warn, inform and advise the public in the event of an emergency; • share information with other local responders to enhance co-ordination; • co-operate with other local responders to enhance co-ordination and efficiency, and; • provide advice and assistance to businesses and voluntary organisations about business continuity management.[4]

2 The Highways Agency have the same roles for runoff that is collected within the Highways Agency network

3 This includes being the planning authority for minerals and waste

4 From https://www.gov.uk/preparation-and-planning-for-emergencies-responsibilities-of-responder-agencies-and-others

Table C-1 Roles, duties powers and responsibilities of Risk Management Authorities

Risk Management Authority	Overview of role	Duties, powers and responsibilities
The Environment Agency	Strategic overview of all sources of flood risk, and operational responsibility for flooding from Main Rivers, the Sea and Reservoirs	**Duties:** • develop, maintain, apply and monitor a strategy for flood and coastal erosion risk management in England; • specific consultation body on the preparation of local plans; • statutory consultee for proposed developments in flood zones 2 and 3, and in areas with critical drainage problems in flood zone 1 where the Environment Agency has notified the local planning authority; • statutory consultee for work or operation conducted in the bed of, or within 20 meters of the top of a bank of a Main River. • responsible for consenting third party works on Main Rivers; • establish Regional Flood and Coastal Committees; • co-operate with risk management authorities for the purposes of managing flood or coastal erosion risk; • contribute towards achievement of sustainable development; • must report to the Minister about flood and coastal erosion risk management, and; • duty to be subject to scrutiny from Lead Local Flood Authority with respect to flood risk management functions. **Powers:** • designate structures and features that affect flooding; • request information from any person with respect to flood and coastal erosion; • sanction persons who do not provide information following a request for information; • manage flood risk from Main Rivers, the Sea and Reservoirs; • may make grants in respect of expenditure incurred or expected to be incurred in connection with flood or coastal erosion risk management in England; • may issue levies to the lead local flood authority for an area in respect of the Agency's flood and coastal erosion risk management functions in that area, and; • arrange for a coastal erosion risk management function to be exercised on its behalf by a coast protection agency, Lead Local Flood Authority or Internal Drainage Board. **Other:** • provides fluvial and coastal flood warnings; • supports emergency responders when flooding occurs; • allocation of flood and coastal erosion risk management capital funding (Flood and Coastal Risk Management Grant in Aid[5]), and; • provides advice to local planning authorities in relation to development and flood risk.

5 Formally known as Flood Defence Grant in Aid

Table C-1 Roles, duties powers and responsibilities of Risk Management Authorities

Risk Management Authority	Overview of role	Duties, powers and responsibilities
Wessex Water	Responsible for draining foul water, and runoff from roof and yards	**Duties:** • responsible for effectually draining foul water, and roof and yard runoff from their area; • duty to co-operate and may share information; • duty to be subject to scrutiny from Lead Local Flood Authority with respect to flood risk management functions; • adopt private sewers; • non-statutory consultee where a drainage proposal would interact with a public sewer, and; • need to have regard to the Local Flood Risk Management Strategy and the National Flood and Coastal Erosion Management Strategy.
Bristol Water	Manage service reservoirs for which they are responsible	**Duties[6]:** • responsible for managing service reservoirs under their ownership; • prepare on-site emergency plans for service reservoirs under their ownership; • duty to co-operate and may share information; • duty to be subject to scrutiny from Lead Local Flood Authority with respect to flood risk management functions, and; • need to have regard to the Local Flood Risk Management Strategy and the National Flood and Coastal Erosion Management Strategy.

6 Excluded burst water main flooding as this is not defined as a 'flood' in the Flood and Water Management Act (2010)

Appendix D
Location-specific action plan

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Introduction

The regional Surface Water Management Plan is the most comprehensive source of information about location-specific actions. It contains at least one action for each of the wet-spots identified as being vulnerable to surface water flood risk based on historical flooding incidents and predicted flood risk. For the Local Flood Risk Management Strategy the location-specific action plan has been transposed from the Surface Water Management Plan because it is based on the most comprehensive and robust information available.

This location-specific action plan recommends measures to investigate, reduce or mitigate flood risk in Bath & North East Somerset, and developed so it can be delivered in a phased approach based on consideration of the frequency of flooding and vulnerability of receptors. In many locations the action plan recommends further investigation or survey in the first instance. This is necessary to fully understand flooding mechanisms and impacts prior to the development of flood mitigation schemes. This is a 'live' action plan which will be updated as measures are implemented or new information becomes available following further inspections or investigations. Its implementation will now form part of the Local Flood Risk Management Strategy as this is the overarching strategy for managing local flood risk in the region, and will be reviewed on an annual basis during preparation of the annual action plan.

A significant number of the wet-spots (42) identified in the Surface Water Management Plan had common actions around improvements to highway and/or land drainage, and have been grouped together in the Surface Water Management Plan and Local Flood Risk Management Strategy. For these wet-spots a five stage implementation plan was identified in the regional Surface Water Management Plan:

- monitor;
- check cyclic maintenance has been carried out;
- investigate performance of highway/land drainage system, identifying any maintenance or design requirements;
- carry out required maintenance or design and construct engineering scheme, and;
- implement continued maintenance programme.

In addition, a further 15 wet-spots identified in the regional Surface Water Management Plan have been assigned specific actions. In these wet-spots the actions are bespoke to each area, and range from inspection and investigation, through to scheme design and build. The following wet-spots have specific actions identified in the regional Surface Water Management Plan, and have been adopted for the Local Flood Risk Management Strategy:

- Bath City Centre;
- Batheaston and Bathford;
- Chew Magna;
- Chew Stoke;
- Clandown;
- West Harptree;
- Whitchurch;
- Keynsham;
- Lower Bristol Road;
- Timsbury;
- Midsomer Norton;
- Weston and Upper Weston;
- Weston Village;
- Weston Park, and;
- White Cross Farm (Bristol Road).

Across these wet-spots 21 specific actions have been identified. 17 of these actions are considered high priority in the regional Surface Water Management Plan, with a further four considered as medium priority.

The action plans are set out in subsequent tables. The column headings are listed below for reference:

- Wet-spot ID: to allow cross reference with the Interactive Flood History Maps;
- Location: providing location context;
- Driver: providing justification of the action;
- Action: an outline of the mitigation measure required;
- Implementation Plan: step by step plan of tasks required to complete the action, split into numbered phases (1-4);
- Plan Progress at April 2015: The step on the implementation plan that each action is at, at the time of publication of this report. This column will be updated by Bath & North East Somerset as actions progress;
- Action Owner: sets out which partner or stakeholder is responsible for implementing the actions;
- Action Supporter: sets out which partner or stakeholder will support the implementation of the action;
- Priority*: sets out what order the actions should be undertaken.

* In the context of Priority, actions have been prioritised by considering frequency of flooding and vulnerability of receptors. There are four classifications of action priority:
High: indicating a recent flood events with a high frequency, affecting a more vulnerable receptor;
Medium: indicating high frequency flooding affecting less vulnerable receptors OR lower frequency flooding affecting more vulnerable receptors;
Low: indicating one off flood events affecting low vulnerability receptors;
Complete: indicating completed actions which have been added to include where work has already been undertaken, to avoid duplicating efforts and track progress.

Location Specific Action Plan

Wetspot ID: **DA02A** Location: **Chew Magna**	**Driver** Chew Magna suffers from significant flood risk. The local flood risk mechanisms are integrated with main river flooding. Investment has been made in PLP measures to reduce the damage caused by flooding in this area. **Action** Maintenance of drainage assets to enable effective drainage and source control. **Implementation Plan** 1. Asset inspection 2. Undertake necessary maintenance 3. Implement a continued asset maintenance programme 4. Implement source control measures to reduce surface water runoff	**Plan Progress at April 2015:** 1 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Local Highway Authority **Priority:** High
Wetspot ID: **DA02A** Location: **Chew Magna**	**Driver** Chew Magna suffers from significant flood risk. The local flood risk mechanisms are integrated with main river flooding. The Environment Agency has carried out extensive fluvial flood modelling for the catchment. **Action** Monitor and record flood incidents and continue sharing of information between B&NES and the Environment Agency **Implementation Plan** 1. Monitor and record flood incidents	**Plan Progress at April 2015:** 1 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Environment Agency, Wessex Water **Priority:** High
Wetspot ID: **DA02D** Location: **Chew Stoke**	**Driver** Properties on Wallycourt Road have experienced flooding from pluvial runoff. **Action** Engineering scheme to improve capacity and conveyance route. **Implementation Plan** 1. Implement drainage scheme 2. Add upgraded highway gullies to Special Attention maintenance list	**Plan Progress at April 2015:** 2 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Local Highway Authority, Environment Agency **Priority:** High

Location Specific Action Plan

Wetspot ID: **DA02D** Location: **Chew Stoke**	**Driver** Bilbie Close has experienced flooding from pluvial runoff. Curo (housing association managing properties) has made investment in Property Level Protection measures to reduce the damage caused by flooding in this area. **Action** Property Level Protection to be installed **Implementation Plan** 1. Curo (housing association) to install Property Level Protection for residents	**Plan Progress at April 2015:** 1 **Action Owner:** Curo **Action Supporter:** Lead Local Flood Authority **Priority:** High
Wetspot ID: **DA03C** Location: **West Harptree**	**Driver** West Harptree has experienced flooding as a result of blocked highway gullies. **Action** Maintenance of drainage assets to enable effective drainage. **Implementation Plan** 1. Asset inspection: is the gulley or pipework blocked 2. Undertake necessary maintenance 3. Implement a continued asset maintenance programme	**Plan Progress at April 2015:** 1 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Local Highway Authority **Priority:** High
Wetspot ID: **DA03C** Location: **West Harptree**	**Driver** West Harptree has experienced flooding as a result of surcharging surface water sewers and gullies. **Action** Undertake scheme to improve capacity and conveyance of drainage system. **Implementation Plan** 1. Engage community on potential scheme(s). 2. Implement drainage scheme. 3. Monitor performance of new systems.	**Plan Progress at April 2015:** 2 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Local Highway Authority **Priority:** High

Location Specific Action Plan

Wetspot ID: **DA03C** Location: **Ridge Lane and Cowleaze Lane, West Harptree**	**Driver** West Harptree has experienced flooding as a result of surcharging culverted watercourses and highway drains. **Action** Undertake scheme to improve capacity and conveyance of drainage system. **Implementation Plan** 1. Engage community and inform how they can contribute to managing flood risk. 2. Source control measures are required to Ridge Lane and Cowleaze Lane	**Plan Progress at April 2015:** 2 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Local Flood Reps, Wessex Water **Priority:** High
Wetspot ID: **DA05A** Location: **Whitchurch**	**Driver** Development is planned on the fringe of Whitchcurch. **Action** Upgrade Surface Water sewer system for the area. **Implementation Plan** 1. Design a drainage scheme which will work within the current restrictions	**Plan Progress at April 2015:** 1 **Action Owner:** Wessex Water, Developer **Action Supporter:** Lead Local Flood Authority, Local Planning Authority **Priority:** High
Wetspot ID: **DA05A** Location: **Whitchurch**	**Driver** This area is defined as a Flood Risk Area and Bristol Lead Local Flood Authority is taking the lead on the Flood Risk Management Plan **Action** Any proposed developments must consider the Flood Risk Management Plan for the area. **Implementation Plan** 1. Inform developers of the Flood Risk status	**Plan Progress at April 2015:** 1 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Bristol City Lead Local Flood Authority, Local Planning Authority

Location Specific Action Plan

Wetspot ID: **DA08B** Location: **Keynsham**	**Driver** East Keynsham (A4) has experienced flooding from a number of sources including fluvial interactions, pluvial runoff and highway gulley blockage. **Action** Monitor future flood incidents in this area, if flooding continues to cause disruption, upgrade works to highway drainage may be required. **Implementation Plan** 1. Monitor flooding at this location 2. Understand the cause of flooding 3. Assess the need for upgrade works to the drainage network	**Plan Progress at April 2015:** 2 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Local Highway Authority, Environment Agency, Wessex Water **Priority:** High
Wetspot ID: **DA10B** Location: **Timsbury**	**Driver** Bloomfield Road has experienced surface water flooding, particularly as a result of blocked highway gullies. **Action** Maintenance of drainage assets to enable effective drainage. **Implementation Plan** 1. Asset inspection: is the gulley or pipework blocked 2. Undertake necessary maintenance 3. Implement a continued asset maintenance programme	**Plan Progress at April 2015:** 1 **Action Owner:** Local Highway Authority **Action Supporter:** - **Priority:** High
Wetspot ID: **DA11A** Location: **Midsomer Norton**	**Driver** Midsomer Norton has experienced flooding from a number of sources across the town. **Action** Work with Environment Agency to better understand hydraulics and flood risk. **Implementation Plan** 1. Undertake integrated hydraulic modelling	**Plan Progress at April 2015:** 1 **Action Owner:** Lead Local Flood Authority **Action Supporter:** Local Highway Authority, Environment Agency, Wessex Water **Priority:** High

Location Specific Action Plan

Wetspot ID: **DA16A**

Location: **Weston and Upper Weston**

Driver
Significant areas of development are planned on the fringes of Upper Weston and Weston.

Action
Manage the risk of exacerbating an existing surface water problem by considering drainage at master planning stage.

Implementation Plan

1. Establish the current status of the planning applications
2. Inform the developer of the wet-spot status
3. Design a drainage scheme which will work within the current restrictions

Plan Progress at April 2015: 1

Action Owner: Lead Local Flood Authority, Developer

Action Supporter: -

Priority: High

Wetspot ID: **DA16A**

Location: **Weston Village**

Driver
This is a steep catchment. There is a potential flood risk stemming from maintenance of a culverted watercourse through the village.

Action
Undertake study of flooding issues and identify potential measures.

Implementation Plan

1. Engage local community
2. Commission study
3. Identify potential improvements
4. Identify funding opportunities

Plan Progress at April 2015: 1&2

Action Owner: Lead Local Flood Authority

Action Supporter: Wessex Water, Environment Agency

Wetspot ID: **DA16D**

Location: **Weston Park**

Driver
Weston Road has experienced flooding. The sources have not been well documented but includes highway gulley blockage.

Action
Maintenance of drainage assets to enable effective drainage.

Implementation Plan

1. Asset inspection: is the gulley or pipework blocked
2. Undertake necessary maintenance
3. Implement a continued asset maintenance programme

Plan Progress at April 2015: 3

Action Owner: Lead Local Flood Authority

Action Supporter: -

Priority: High

Location Specific Action Plan

Wetspot ID: **DA16G**

Location: **Bath City Centre**

Driver
Bath City Centre has experienced flooding. The sources have not been well documented, however likely sources include fluvial, surface water / pluvial, groundwater and highway gulley blockage.

Action
Continue to monitor flood incidents in this area, if flooding continues to cause disruption, upgrade works to highway drainage may be required.

Implementation Plan

1. Monitor flooding at this location
2. Understand the cause of flooding
3. Assess the need for upgrade works to the drainage network

Plan Progress at April 2015: 1

Action Owner: Lead Local Flood Authority

Action Supporter: Lead Local Flood Authority, Local Highway Authority, Environment Agency, Wessex Water

Priority: High

Wetspot ID: **DA16G**

Location: **Lower Bristol Road**

Driver
Surface water flooding and highway drainage issues known. Significant development and associated river Avon flood risk improvements planned.

Action
Ensure any development/ flood risk scheme appreciates surface water flood risk.

Implementation Plan

1. Ensure developer is aware of surface water flooding issues (and potential interaction with river Avon).

Plan Progress at April 2015: 1

Action Owner: B&NES Major projects

Action Supporter: Environment Agency, Lead Local Flood Authority

Location Specific Action Plan

Wetspot ID: **DA02B**

Location: **Chew Magna, Winford Road and Littleton Lane**

Driver
Winford Road has experienced flooding as a result of pluvial runoff and blockage on a highway structure. Investment has been made in PLP measures to reduce the damage caused by flooding in this area.

Action
The highway drainage assets require maintenance and an assessment of capacity.

Implementation Plan

1. Asset inspection: is the culvert blocked
2. Maintenance of culvert
3. Monitor future flooding incidents at this location
4. Assess the need for upgrade works to the drainage network

Plan Progress at April 2015: 1

Action Owner: Local Highway Authority

Action Supporter: Lead Local Flood Authority

Priority: Medium

Wetspot ID: **DA02C**

Location: **Chew Stoke**

Driver
Chew Stoke has experienced surface water flooding, particularly from pluvial runoff. Investment has been made in PLP measures to reduce the damage caused by flooding in this area.

Action
Source control measures are required to mitigate the flood risk in this area.

Implementation Plan

1. Engage the community and inform how they can contribute to managing flood risk
2. Promote Wessex Water's save water scheme, providing discounts of the purchase of a water butt

Plan Progress at April 2015: 1

Action Owner: Bath & North East Somerset Council, Wessex Water

Action Supporter: Local Flood Representatives, Environment Agency

Priority: Medium

Location Specific Action Plan

Wetspot ID: **DA03B** Location: **White Cross Farm**	**Driver** Bristol Road has experienced flooding from blocked gullies and drainage ditches. **Action** Education of riparian owners on their rights and responsibility. **Implementation Plan** 1. Engage the community and inform how they can contribute to managing flood risk 2. Explain the importance of maintenance to ditches	**Plan Progress at April 2015:** 1 **Action Owner:** Bath & North East Somerset Council **Action Supporter:** Local Flood Representatives **Priority:** Medium
Wetspot ID: **DA11C** Location: **Clandown**	**Driver** Springfield Place has experienced flooding from an ordinary watercourse. **Action** Education of riparian owners on their rights and responsibilities. **Implementation Plan** 1. Engage the community and inform how they can contribute to managing flood risk 2. Explain the importance of maintenance to ditches	**Plan Progress at April 2015:** 1 **Action Owner:** Bath & North East Somerset Council **Action Supporter:** Local Flood Representatives **Priority:** Medium

Appendix E
Review of Funding Sources

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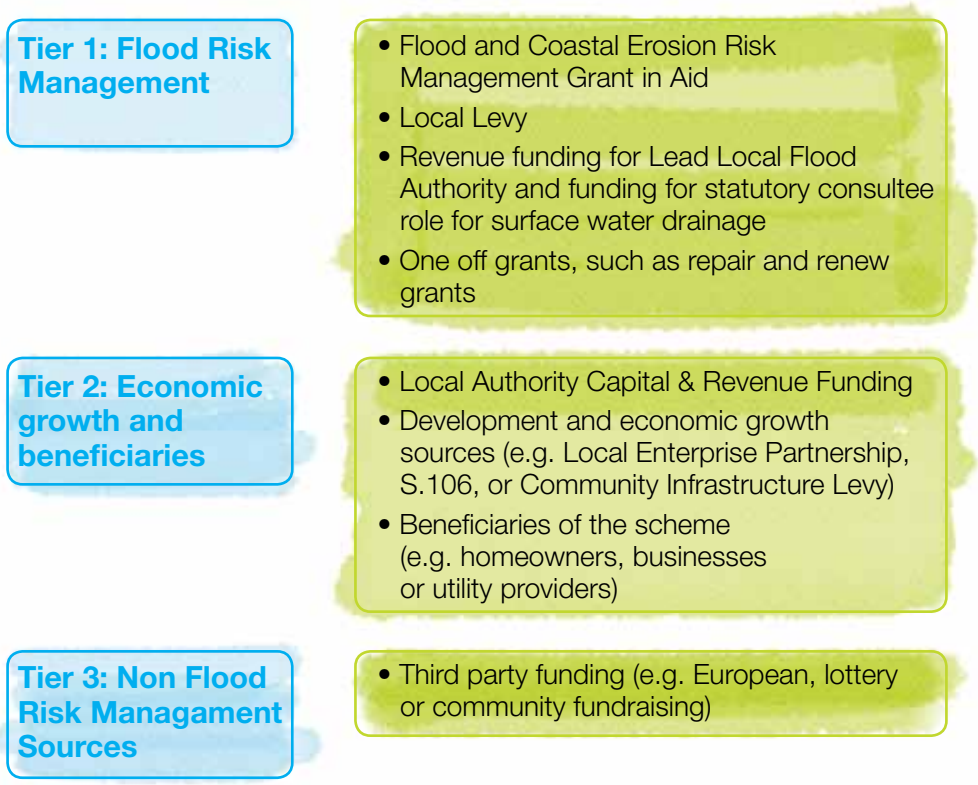
Introduction

This section sets out the potential sources of funding available for flood risk management works in Bath and North East Somerset and has been split into a tiered approach as shown in Figure E-1 and described in the main Local Flood Risk Management Strategy document.

Figure E-1 Options for funding of capital flood risk management works.



Tier 1 – Dedicated Flood Risk Management Funding Sources

Funding from dedicated flood risk management sources will most likely make up the majority of the funding mix for delivering the Bath & North East Somerset Strategy measures, supported by other alternative sources. The following expands on current dedicated funding sources available for flood risk management purposes.

Flood and Coastal Erosion Risk Management Grant in Aid

In relation to flood risk management, capital funding from Government is provided through Flood and Coastal Erosion Risk Management Grant-in-Aid[1]. This is provided by the Department for Environment, Food and Rural Affairs and administered and managed by the Environment Agency, although funding approvals are also subject to the consent of the relevant Regional Flood and Coastal Committee. Bath & North East Somerset Council falls within the Wessex Regional Flood and Coastal Committee and both Councilor Charles Gerrish and Councilor Brian Simmons sit on this committee. The Wessex Regional Flood and Coastal Committee area is shown here.

Flood and Coastal Erosion Risk Management Grant-in-Aid is available to projects relating to all sources of flooding, and has historically been the most important source of funding for flood risk management and coastal erosion schemes. Flood and Coastal Erosion Risk Management Grant-in-Aid is not used to fund studies that are not materially linked to a flood risk scheme (e.g. it will fund a Project Appraisal Report which can lead to the development of a scheme).

However, Flood and Coastal Erosion Risk Management Grant-in-Aid is unlikely to meet the full scheme costs in most cases (as outlined for the Bath Flood Risk Management Project). For the Bath Flood Risk Management Project a Flood and Coastal Erosion Risk Management Grant-in-Aid contribution of £0.6m for 2014/15 was made towards scheme costs (with a further £0.5m from Regional Flood and Coastal Committee Local Levy. This roughly equaled 12% of the scheme cost.

1 This is formerly known as Flood Defence Grant in Aid

Detailed explanatory notes and a spreadsheet calculator tool are available to guide practitioners through the Flood and Coastal Erosion Risk Management Grant-in-Aid application process. Up to date information, including a full table of the outcome measures and benefits under each that will qualify for national funding is available at: https://www.gov.uk/flood-and-coastal-defence-appraisal-of-projects.

Local Levy

Local Levy can be raised by Wessex Regional Flood and Coastal Committee by way of a levy precept on Bath & North East Somerset Council and other relevant local or unitary authorities. Local Levy funding can be used to support flood risk management projects that do not attract 100% national funding through Flood and Coastal Erosion Risk Management Grant-in-Aid, thus enabling locally important projects to be undertaken to reduce the risk of flooding within the RFCC area. Funds raised using this existing Regional Flood and Coastal Committee local levy will count as a local contribution in terms of the Flood and Coastal Erosion Risk Management Grant-in-Aid process, even though the levy is supported by funding through the Department of Communities and Local Government.

Lead Local Flood Authority Grant for New Responsibilities

In December 2010 the Department for Environment, Food and Rural Affairs announced £21million worth of grants to provide additional funding specifically to support to councils with Lead Local Flood Authority status. This was in addition to existing Formula Grant arrangements, and was aimed to allow Lead Local Flood Authorities to perform new roles and duties under the Flood and Water Management Act and Flood Risk Regulations. In 2015/16 £37,000[2] was allocated to Bath & North East Somerset Council, but there is no certainty of funding from Central Government beyond 2015/16. Also, once allocated, these funds are not ring-fenced so in order to access them it is important to raise awareness of flood risk and keep it near the top of the local political agenda to ensure funding can be gained.

The Communities and Local Government Department published a New Burdens Assessment establishing the payment required to ensure that Lead Local Flood Authorities will have sufficient financial resources to meet the expectations of their new statutory consultee role on planning applications in relation to surface water drainage for major development, The Department for the Environment, Food and Rural Affairs have since provided funding to all Lead Local Flood Authorities for the first year (2015/16) of their new statutory consultee role and for one of costs to prepare IT, internal systems, train stakeholders, raise awareness and develop advice. A small contribution to fund the burden of providing technical advice and administration is also expected to be provided to Lead Local Flood Authorities for the first 3 years (up to 2017/18), but this has not yet been secured.

One off grants

Government occasionally makes funding available through one-off grants and pilot projects. Working together, Risk Management Authorities within Bath & North East Somerset area should bear this in mind and be prepared to identify and apply for appropriate opportunities if and when they arise. Previous examples have included the Department for Environment, Food and Rural Affairs early action fund for surface water schemes in 2010, and the repair and renew grant following significant national flooding in 2013/14[3].

2 Further details are as outlined here.

3 https://www.gov.uk/government/publications/flooding-recovery-households-and-businesses-applying-for-the-repair-and-renew-grant-scheme

Tier 2 – Economic Growth and Beneficiaries funding sources

Local Authority Revenue Funding

Local authorities have additional capital and revenue budgets which can be used to supplement investment in flood risk management. This is particularly relevant where measures or schemes, such as Sustainable Drainage Systems, can be identified which create multiple benefits across a number of Bath & North East Somerset Council's duties such as highways and public open space.

However, in the current economic times, there are budgetary constraints across Bath & North East Somerset Council area. This was highlighted in the Bath & North East Somerset Community Infrastructure Levy Funding Gap Evidence Paper[4] where it was identified that there is a total £234 million funding gap in order to deliver key and desirable infrastructure to support planned Core Strategy growth. This includes an estimated £6.8 million gap for the ongoing support of water and drainage infrastructure.

The two primary sources of income for Bath & North East Somerset are:

- council tax collected from local residents, and;
- settlement Funding Assessments which replaced Formula Grants. Each local authority's Settlement Funding Assessment is comprised of Revenue Support Grant and Baseline Funding Levels, which is their share of the local share of business rates[5].

Funding Sources Relating to Development and Regeneration

Section 106 Agreements

Section 106 agreements can be used to support the provision of services and infrastructure, including flood risk management measures. The agreements provide a means to ensure that a proposed development contributes to the creation of a sustainable environment, particularly by securing contributions towards the provision of infrastructure and facilities. Between 2003 and 2013 £24.4m was collected in Bath & North East Somerset area through this method. Site viability is key to a developer's willingness to contribute to this type of agreement. The earlier any local flood risk management costs associated with a site are identified the better as developers can then factor these costs into the price of the land and make better informed decisions as to the overall viability of the site.

Community Infrastructure Levy

The Community Infrastructure Levy is a 'tariff' style charge, which allows local authorities to charge developers to contribute to the cost of providing some of the infrastructure needed to support the development of the area where there is a demonstrable need and once this need has gone through a process of examination.

Bath & North East Somerset Council is consulting on the charging schedule for the implementation of a Community Infrastructure Levy as it has been identified that there is a funding gap to deliver Core Strategy growth for the area. Following the planned implementation of Community Infrastructure Levy in the Bath & North East Somerset area, Planning Obligations or Section 106 contributions will be replaced for many forms of infrastructure. However, Section 106 agreements will still be used for site-specific mitigation measures and for affordable housing provision.

4 Available here

5 https://www.gov.uk/government/publications/breakdown-of-settlement-funding-assessment-final-local-government-finance-settlement-2015-to-2016

Key to obtaining funding towards flood risk schemes from this source will be proactive infrastructure planning through the Infrastructure Delivery Plan process. This will provide a high level summary of anticipated major infrastructure funding requirements that the Council will be seeking to fund partially or fully through Community Infrastructure Levy. Schemes which are included in the Infrastructure Delivery Plan will be more likely to obtain Community Infrastructure Levy contributions.

Local Enterprise Partnership Funding

Local Enterprise Partnerships have been set up to provide strategic leadership and set out local economic properties to help support the Government's Local Growth White Paper. The West of England (Local Enterprise) Partnership covers the Bath & North East Somerset area.

The roles of the Local Enterprise Partnership set out in the White Paper relating to funding include:

- working with Government to set out key investment priorities;
- coordinating approaches to leveraging funding from the private sector, and;
- coordinating proposals or bidding directly for the Regional Growth Fund (expanded in section 2.4).

In 2012 £11,579,541 was allocated to the West of England Partnership through the Growing Places Fund to tackle immediate infrastructure investment constraints. The main aim of this fund is to focus on housing and transport, but if for example solutions to reduce flood risk for homes are proposed these many be eligible.

From 2014 Local Enterprise Partnerships have been given responsibility for delivering part of the European Union Structural and Investment Fund, and the West of England Partnership has been allocated €68.6m to spend between 2014 and 2020. Guidance published in 2013 suggests that activities to support; innovation, research and technologic development; small businesses; employment; skills; social inclusion; or development of a low carbon economy are the main priorities of this fund. This could potential mean that if projects are correctly developed and targeted there could be funding available from this source to support flood risk projects. However, as yet this has not been tested.

Regional Growth Fund

The Regional Growth Fund is a £3.2 billion fund operating across England from 2011 to 2017, and aims to support eligible projects and programmes that are also raising private sector investment to create economic growth and sustainable employment. This funding source is unlikely to offer a realistic source of funding for local flood risk management schemes unless there are clear benefits to private business such as expansion and job growth through greater productivity or more available land.

Private Beneficiary Funding

Funding can be levied from private sector beneficiaries of a flood risk management scheme in a number of ways, which are outlined below.

- Business rate supplement: Bath & North East Somerset Council has the power to levy a local Business Rate Supplement and to retain the proceeds for investment in that area. Proceeds must be spent on projects which contribute to the economic development of the local area.
- Business Improvement Districts: this is a defined area within which businesses pay an additional tax or fee in order to fund improvements within the council's boundaries. Flood risk management schemes could potentially access funding from this source if they could be demonstrated to provide specific benefits to businesses within the area.
- Direct Beneficiary Contributions: There are currently limited case study examples of beneficiary contributions from companies or corporate bodies. However, one such example is the Sandwich tidal flood defence scheme, where a private company provided significant funding towards the scheme .
- Utility providers may be willing to contribute towards a flood risk management scheme, if the applicant can demonstrate the long term benefits of flooding on their customer supply.

6 More information is available at http://www.environment-agency.gov.uk/news/146249.aspx

In addition, some corporate bodies may be persuaded to contribute to flood risk management measures. There are a number of ways to approach corporate giving. However, for every penny that they provide they need to see a clear commercial benefit be it in terms of marketing, promotion, training, or reduction in flood risk.

- Employee Volunteering: Brings in very little financial support but can provide good PR and will boost volunteer numbers.
- Sponsorship: Generally provides low level support, averaging around a few thousand pounds. It is normally used to raise the profile of the company in the local community so needs to be high profile.

Tier 3 – Non Flood Risk Management Funding Sources

European Union

European Union funding is a complex and specialist field. Some authorities have invested proactively in this area of fundraising and are experienced in obtaining funds through this route; for example Cornwall and the Isles of Scilly prepared a detailed evidence base to bid for Convergence status in 2005 and thereby gained access to funding through this European economic regeneration programme. Funding from the European Union generally needs to be for projects which are innovative. Applicants need to be in a partnership that includes at least four other projects spread across the European Union and they need to demonstrate the transference of learning across the areas.

Grants tend to be in the region of a few million pounds spread across all participants. The administrative burden on the main applicant can be considerable and needs to be considered when budgeting for European Union fundraising. Relevant funding sources to be investigated include the following:

- European Regional Development Fund;
- European Agricultural Fund for Rural Development, and;
- European Social Fund

The European Investment Bank has expressed a willingness to fund flood defence projects through loans at a competitive rate, but this is only generally provided for large scale multi million pound projects.

Lottery

All the major lottery funding providers (Heritage Lottery Fund, Big Lottery, and Arts Council) have clear guidelines and funding streams. Each of these operates on slightly different timescales and has various specific requirements.

Grants ranging from a few hundred to several million (depending on the type and scale of project) are awarded to sport, heritage and community activities

and projects that make a positive contribution towards education, health and the environment in local communities. Flood risk management projects may be eligible if they can demonstrate that they do this, for example by improving social cohesion through volunteering to clean up local waterways. One example is Awards for All, which provides grants for projects that will help to improve the lives of individuals, boost creativity or encourage more people to get involved in local communities.

Land management funding sources

Countryside Stewardship is a scheme under the European Union Common Agricultural Policy and provides incentives for land managers to look after their environment. From 2015 it was opened to all eligible farmers, woodland owners, foresters and other land managers.

Under this Countryside Stewardship, water capital grants are available for farmers and land managers in priority catchments, to fund infrastructure works to help reduce water pollution from agriculture. Through this initiative up to £10,000 per holding may be made available, but the scheme is competitive and applications will be scored and accepted subject to the budget available[7]. Applications are also only open for a limited period each year. Although this is targeted funding it may be a potential source of funding for local flood risk management where water quality improvement from agricultural land can also be demonstrated.

Water Framework Directive Funding

If it can be demonstrated that local flood risk management projects can contribute towards ensuring ecological status of local waterbodies can be improved through measures to be implemented, then it may be possible to obtain funding from the Water Framework Directive. An example of this could be that through controlling soil erosion of land upstream in a catchment in an attempt to reduce local flood risk, sediment loads to a river are also controlled which would improve water quality and thus ecological status.

However, it should be noted that funding through the Water Framework Directive is assessed on a case by case basis and not guaranteed.

Non-Government Organisations and Charitable Trusts

Many local flood risk management projects are on a fairly small, localised scale and may struggle to access, or attract funding from, sources outlined here. In these instances grants or donations from sources such as Non-Government Organisations or charities can provide an additional/alternative route for funding.

A Non-Government Organisation or charitable trust could consist, for example, of local residents with a common interest in protecting their town against flood risk to undertake necessary works such as implementation of Sustainable Drainage System measures to reduce surface water flooding, or ongoing maintenance of local flood defenses.

Another route that can be utilised to drive down operation & management costs is through the establishment of partnerships that take responsibility for schemes after their completion. Schemes with a particular wildlife interest could for example be packaged to attract the support of the local Wildlife Trust or the RSPB.

Community Fundraising and Events

Community fundraising means raising money via a series of volunteer run events, sponsorship, and from established local groups. It is a time consuming way of raising small sums of money, but a great way to deliver community engagement and ownership which can in itself help a project to qualify for other sources of funding.

The connection for participant and donor needs to be immediate, obvious and usually selfless. In Cockermouth, Cumbria, the local community raised £215,000 towards the flood alleviation scheme, with contributions coming from local residents and businesses[8].

7 Further details are available at: https://www.gov.uk/government/publications/guide-to-countryside-stewardship-water-capital-grants-2015/guide-to-countryside-stewardship-water-capital-grants-2015

8 http://www.cumbriacrack.com/2013/03/18/cockermouth-flood-alleviation-scheme-funded-by-a-partnership-approach/

Public Appeals and Volunteering

Closely allied with community fundraising, public appeals tend to be cost heavy, but can generate reasonable returns if aimed at the right target audience.

The best public appeals tap into an established community need or awareness and can be run via the local media and the internet. A 'friends of' scheme is often a good way to get this type of mechanism kick-started. Well run, high quality volunteering actually costs money, but by incorporating structured volunteering opportunities the project increases its community engagement and develops a sense of ownership in both the problem and solution.

Volunteering can be used to bring in funding by counting as match funding. By enhancing a volunteer project with structured training funding can be obtained from back to work schemes and government initiatives to tackle the growing number of people not in education, employment or training.

Trusts

There are thousands of grant making trusts across the country. Most, but not all, favour outcome led projects so this needs to be borne in mind when packaging up projects. Trusts are unlikely to fund large scale infrastructure projects, but they may want to fund a programme of education about the causes and prevention of flooding for example.

Potential trusts in Bath & North East Somerset who may be willing to provide sources of funding could include the National Trust, Canals and Rivers Trust, Primary Care Trust or Bath Preservation Trust. Although not technically a trust, Bath University may also be willing to provide support in the form of research for example, but this would need to be discussed based on individual project needs.

Landfill Communities Fund

If the project site is within a certain distance of a landfill site funding can be sought from a range of landfill operators.

The Landfill Communities Fund (formerly the Landfill Tax Credit Scheme) enables landfill site operators to claim tax credit for contributions they make to approved environmental bodies for spending on projects that benefit the environment. The environmental bodies are those enrolled by Entrust, the regulatory body for the scheme. Further details are available at: http://www.entrust.org.uk/landfill-community-fund.

Appendix F
Glossary

Catchment Flood Management Plan

A Catchment Flood Management Plan is a high-level strategic plan through which the Environment Agency seeks to work with other key-decision makers within a river catchment to identify and agree long-term policies for sustainable flood risk management.

Civil Contingencies Act (2004)

Legislation that aims to deliver a single framework for civil protection in the United Kingdom and sets out the actions that need to be taken in the event of a flood

Climate Change

A long-term change in the statistical distribution of weather patterns over periods of time that range from decades to millions of years. It may be a change in the average weather conditions or a change in the distribution of weather events with respect to an average, for example, greater or fewer extreme weather events. Climate change may be limited to a specific region, or may occur across the whole Earth.

Combined sewer

A sewer through which surface and foul water passes.

Conservation of Habitats and Species Regulations (2010)

An Act which transposed the Habitats Directive into United Kingdom law. The regulations aim to help maintain and enhance biodiversity throughout the European Union, by conserving natural habitats, flora and fauna. The main way it does this is by establishing a coherent network of protected areas and strict protection measures for particularly rare and threatened species.

Critical Infrastructure

A term used to describe the assets that are essential for the functioning of a society and economy. Most commonly associated with the term are facilities for: electricity generation, transmission and distribution; gas production, transport and distribution; oil and oil products production, transport and distribution; telecommunication; water supply (drinking water, waste water/ sewage, stemming of surface water (e.g. dikes and sluices)); agriculture, food production and distribution; heating (e.g. natural gas, fuel oil, district heating); public health (hospitals, ambulances); transportation systems (fuel supply, railway network, airports, harbours, inland shipping); financial services (banking, clearing); and security services (police, military).

Elected Members

Local councillors are elected by the Bath & North East Somerset community to decide how the council should carry out its various activities.

Flood

Flooding is caused when land not normally covered by water becomes covered by water. A road or property can be flooded when:

- there is exceptional rainfall, which is greater than the capacity of drainage systems;
- drainage systems are not well maintained, or there are blockages/collapses in the drainage network;
- there is increased runoff from adjoining fields or hard standing areas, or
- a river of watercourse overflows

Flood and Water Management Act (2010)

The Act brings together the recommendations of the Pitt report and previous policies, to improve the management of water resources and create a more comprehensive and risk based regime for managing the risk of flooding from all sources. The Act states that its purpose is to “make provision about water, including provision about the management of risks in connection with flooding and coastal erosion.”

Flood Risk

Flood risk is a combination of two components: the chance (or probability) of a particular flood event and the impact (or consequence) that the event would cause if it occurred

Fluvial

The processes associated with rivers and streams and the deposits and landforms created by them

Flood Risk Regulations (2009)

Transposes the European Commission Floods Directive (Directive 2007/60/EC on the assessment and management of flood risks) into domestic law and implements its provisions. The regulations outline the roles and responsibilities of the various authorities consistent with the Flood and Water Management Act (2010) and provide for the delivery of the outputs required by the directive. The Directive requires Member States to develop and update a series of tools for managing all sources of flood risk.

Flood Zones

Nationally consistent delineation of 'high' and 'medium' flood risk, published on a quarterly basis by the Environment Agency.

Foul sewer

A sewer that is designed to carry contaminated wastewater to a sewage works for treatment.

Green belt

Protected areas of reserved open land, mainly around large cities, for the purpose of preventing urban sprawl by keeping land permanently open. Policy CP8 of our Core Strategy, adopted in 2014, details our Green Belt policy.

Groundwater flooding

Groundwater flooding occurs where the water levels in rock and soil become high enough for the water to appear near to or above the ground surface. This may happen, for example, where there are underlying gravels, or porous or fractured rocks, allowing water to pass through

Lead Local Flood Authority

Lead Local Flood Authorities are county councils and unitary authorities. Under the Flood and Water Management Act (2010), Lead Local Flood Authorities are required to:

- Prepare and maintain a strategy for local flood risk management in their areas, coordinating views and activity with other local bodies and communities through public consultation and scrutiny, and delivery planning.
- Maintain a register of assets – these are physical features that have a significant effect on flooding in their area.
- Investigate significant local flooding incidents and publish the results of such investigations
- Consult on planning applications for major development.
- Issue consents for altering, removing or replacing certain structures or features on Ordinary Watercourses.
- Play a lead role in emergency planning and recovery after a flood event.

Local Flood Risk

Defined in the Flood and Water Management Act (2010) as flooding from surface water runoff, ordinary watercourses and groundwater

Local Flood Risk Management Strategy

A strategy which must be completed by a Lead Local Flood Authority and must:

- Assess the local flood risk.
- Set out objectives for managing local flooding.
- List the costs and benefits of measures proposed to meet these objectives, and how the measures will be paid for.

Local Flood Representatives

An individual nominated by their Parish Council or Federation of Bath Residents' Associations Group to liaise with Bath & North East Somerset Council's Drainage & Flooding team. They provide an important communication link between residents in the Parish and the Council and other Flood Risk Management stakeholders on issues of land drainage, surface water flooding, groundwater flooding and watercourse flooding.

Local Planning Authority

Body that is responsible for controlling planning and development through the planning system.

Main River

All watercourses shown on the statutory main river maps held by the Environment Agency and the Department for Environment, Food and Rural Affairs. This can include any structure or appliance for controlling or regulating the flow of water into, in or out of the channel. The Environment Agency has permissive power to carry out works of maintenance and improvement on these rivers.

National Planning Policy Framework

Framework which sets out the Government's planning policies for England and how these are expected to be applied. It acts as guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications.

National Flood and Coastal Erosion Risk Management Strategy National strategy which provides the overarching framework for future action by all risk management authorities to tackle flooding and coastal erosion in England.

Operational Flood Working Group

The purpose of the Operational Flood Working Group is to discuss and agree ways to manage flood risk from local sources. The Operational Flood Working Group will discuss specific flooding or drainage issues with a view to coming up with practical measures to improve drainage or reduce flood risk. The group consists of technical officers from the Drainage and Flooding team, the Environment Agency and Wessex Water, as well as other invited Council officers and Local Flood Representatives as required.

Ordinary Watercourse

Any section of watercourse not designated as a Main River.

Our Partners

Include: Risk Management Authorities, the West of England Local Enterprise Partnership, members of the Strategic Flood Board, Operational Flood Working Group, internal departments with Bath & North East Somerset Council, Elected Members, Local Communities and Local Flood Representatives.

Pluvial

Flows that relate to or are characterised by rainfall.

Preliminary Flood Risk Assessment

High level screening exercise to identify areas of significant local flood risk from sources including surface water, groundwater, ordinary watercourses and manmade structures such as canals or sewers but excluding of main rivers.

Return period

The probability of a flood of a given magnitude occurring within any one year e.g. a 1% AEP (1 in 100 year) event has a 1 in 100 chance of occurring in any one year, or a 1% chance in any one year. However, a 1% AEP (1 in 100 year) event could occur twice or more within 100 years, or not at all.

Riparian Owner

All landowners whose property is adjoining to a body of water have the right to make reasonable use of it and suitably maintain it.

Risk Management Authority

Defined in the Flood and Water Management Act (2010), they all have some responsibility for managing flood risk

Section 19 Investigations

Flood investigations which must be undertaken by Lead Local Flood Authorities in accordance with Section 19 of the Flood and Water Management Act (2010).

Sequential Test Informed by a Strategic Flood Risk Assessment, a planning authority applies the Sequential Test to demonstrate that there are no reasonably available sites in areas with less risk of flooding that would be appropriate to the type of development or land use proposed.

Sewer flooding The consequence of sewer systems exceeding their capacity during a rainfall event.

Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment is used as a tool by a planning authority to assess flood risk for spatial planning, producing development briefs, setting constraints, informing sustainability appraisals and identifying locations of emergency planning measures and requirements for flood risk assessments.

Statutory Consultee

An organisation who must provide a substantive response to the local planning authority, within a set deadline, prior to a decision being made on a planning application.

Strategic Flood Board

The Strategic Flood Board provides oversight and partnership working for flood risk management in Bath & North East Somerset. It includes representatives from Bath & North East Somerset, the Environment Agency, Wessex Water, Canal and Rivers Trust, Bristol Water, and Avon Fire and Rescue.

Sustainable Drainage Systems

Sustainable drainage systems are approaches that manage surface water by taking into account water quantity (flooding), water quality (pollution) and amenity issues.

Surface water runoff

Rainwater (including snow and other precipitation) which: is on the surface of the ground (whether or not it is moving); and has not entered a watercourse, draining system or public sewer.

Surface Water Management Plan

A Surface Water Management Plan (Surface Water Management Plan) is a framework through which key local partners work together to understand the causes of surface water, groundwater and/or ordinary watercourse flooding and agree the most cost effective way of managing that risk.

UK Climate Projections 2009

UK Climate Projections 2009 (UKCP09) is a climate analysis tool, funded by the Department of Environment, Food and Rural Affairs, which features the most current comprehensive climate projections. Projections are broken down to a regional level across the UK and are shown in probabilistic form, illustrating the potential range of changes and the level of confidence in each predictions.

Updated Flood Map for Surface Water

National surface water mapping produced by the Environment Agency to facilitate analysis of areas naturally vulnerable to surface water flooding

West of England Partnership

A partnership group established comprising of Bristol, Bath & North East Somerset, North Somerset, and South Gloucestershire Councils, with the purpose of producing consistent Sustainable Drainage Systems guidance across the region

West of England Local Enterprise Partnership

A partnership group set up to support business growth across Bristol, Bath & North East Somerset, North Somerset, Somerset County Council and South Gloucestershire. Includes: business organisations, local authorities, education and training organisations, Government departments and agencies.

Wet-spots

Areas which are considered vulnerable to flooding from surface water, groundwater, and/ or Ordinary Watercourses (taken from the area-wide Surface Water Management Plan)