

BRISTOL CITY COUNCIL

Place Scrutiny

10th September 2015

Report of: Barra Mac Ruairi, Strategic Director Place

Title: Local Flood Risk Management Strategy Update

Ward: Citywide

Officer Presenting Report: John Roy, Group Manager Transport Assets

Contact Telephone Number: 0117 922 3118

RECOMMENDATION

Officers welcome the views of Scrutiny members on progress related to the Actions detailed in the Local Flood Risk Management Strategy (LFRMS). We also request assistance from members in raising the profile of community engagement.

Summary

This report presents an update on progress on the LFRMS and its Action plan

The significant issues in the report are:

- Progress on the Action Plan has been good, the majority of actions are on schedule;
- We have successfully aligned our Flood role, as statutory consultees to the planning process, with regard to improving the delivery of sustainable drainage in the city;
- The River Avon Strategic Flood Defences and Avonmouth/Sevenside Flood Defence projects continue to progress on schedule;
- We would welcome discussion and advice at the Scrutiny meeting on how officers can raise the profile of flood resilience through community engagement

Policy

Under the Flood and Water Management Act 2010, Bristol City Council, as Lead Local Flood Authority (LLFA), has a statutory duty to maintain the Local Flood Risk Management Strategy. The LFRMS was adopted by the Cabinet on the 4th November 2014.

Consultation

Internal

1. In the LFRMS report, we included a report update timeline to be every two years. In addition to this formal update, we propose an annual report to Scrutiny as well as ongoing monitoring of progress via the internal LLFA Working Group see section 9 below.

External

2. During the preparation of the LFRMS, we undertook two consultation events, one with the Harbourside Forum and one with the Chamber of Commerce and Initiatives. We propose to hold follow up engagement events with these groups over the next few months to provide an update on key issues.

3. Context

4. Bristol is one of the top ten cities in the country at risk of flooding, with approximately 25,000 properties at risk from surface water flooding and 1,000 properties at risk from tidal flooding.
5. The LFRMS sets our vision for managing flood risk in Bristol together with our partner organisations that have a role in flood risk management (such as the Environment Agency and Wessex Water). A summary of the LFRMS is provided in Appendix A. The LFRMS is delivery-focussed and has a set of Objectives, Measures and Actions. The Action plan is provided in Appendix B.
6. Overall progress of the Action plan is good and the majority of Actions are complete or on schedule. We are behind schedule on five Actions, mainly as a result of resource and a member of the Flood team leaving the authority. We have managed our resources to ensure the Actions we are behind schedule on are those with a lower priority.
7. As Lead Local Flood Authority, we have a statutory duty to maintain and deliver the LFRMS. In order to embed the LFRMS within the wider Council services, we have established a LLFA Working Group with members from Highways and Traffic, Housing Delivery, Civil Protection

Unit, Marine Services, Neighbourhood Management, Environment and Leisure Services, Public Relations and Bristol Futures. This group meets quarterly and has led to outputs such as a flood risk assessment of Council maintained social housing assets, amongst others. This group also monitors progress against key LFRMS Actions.

8. To formalise our relationships and partnership working with the other flood risk management authorities, Environment Agency and Wessex Water, we have established a Flood Risk Management Working Group and Strategic Board to align and monitor statutory duties and projects. The Working Group meets every two months and has produced outputs such as improving emergency flood response for central Bristol and the Floating Harbour, as well as securing financial contributions to flood schemes. The Strategic Board meets quarterly and has contributed to our processes by approving various reports and aligning priorities of the partner agencies.

LFRMS Action Plan Review

9. The LFRMS Action plan progress update is provided in greater detail in Appendix B. However, the main points we would like to highlight are described in the following sections.
10. With regard to flood mitigation project delivery, our priority Actions are to progress the River Avon Strategic Flood Defences and Avonmouth/Sevenside Flood Defences. Both of these projects are required to facilitate an Enterprise Area and Zone. Progress is as follows;
 - Action 1.2 - River Avon Strategic Flood Defences project is to produce a Tidal Flood Risk Management Strategy including funding strategy by Summer 2016;
 - Action 1.3 - Avonmouth/Sevenside Flood Defences to produce a detailed business case, including detailed designs of flood defences, to enable funding to construct the interventions.
11. Action 3.1 and 3.2 - Concentrating on community engagement and promoting sustainable drainage. This is aiming to raise the profile of resilience against flooding to higher risk areas across the city, as identified by our various studies. The Actions aim to identify community groups throughout the city that we can engage with before establishing an action plan with these groups for increase the flood resilience in their areas. We are also, through the LLFA Working Group, proposing a citywide campaign to encourage citizens to clear road drains of leaves, where it is safe to do so.
12. Action 2.10 - Sustainable drainage (SuDS). This is also a core theme of the LFRMS and is a significant focus for us given the number of

properties at risk from surface water flooding. Sustainable drainage helps to reduce the risk of flooding but also offers many other benefits, including improving water and air quality. It also assists with wider Council and Mayoral priorities with regard to improving the urban realm and sense of place. Progress to date has overall been positive, with the following achievements;

- Actions 4.2 – 4.4 - Successful establishment as statutory consultees to the planning process (as described above)
- Action 2.9 - Pilot SuDS scheme in Southmead (Embleton Road SuDS) due to commence construction in early 2016, part-funded by the Green Capital;
- Action 2.9 - SuDS included as part of a wider flood risk mitigation scheme in Southmead (Stanton Road) due to be constructed in 2016;
- Actions 2.10 and 4.8 - Housing Delivery team’s New Build homes programme designs and planning applications have included SuDS;
- Action 2.10 and 4.8 - Pilot SuDS drainage ‘planter’ installed in the Heron Road Eco Show Home (see <https://warmupbristol.co.uk/article/show-home> for more info)– further information provided in Appendix C;
- Action 2.10 - Easton Way new cycle path, part of the Local Sustainable Transport Fund, has installed SuDS.

13. Officers will present an update of our Action plan in greater detail at the meeting which will give members the opportunity to discuss our work with officers. A summary of Action progress is provided in table 1 below.

Table 1 – Summary of Action Progress

Action Status	Number of Actions
Total no. of actions	43
Actions completed	7
Actions on schedule	34
Actions behind schedule	5

Proposal

14. Despite the successes outlined above, there is still more we can do with regard to raising the profile and benefits of community resilience. We have a specific Action in the LFRMS in relation to community engagement that will be explained at the meeting. We will welcome advice from members of Scrutiny at the meeting as to how we can successfully deliver this Action.

Other Options Considered

15. None considered producing a LFRMS is a statutory duty.

Risk Assessment

16. The ongoing course of action is required to meet our statutory duty under the Flood and Water Management Act 2010. A full risk assessment has been prepared and is reviewed monthly as part of the Council's formal Performance, Programmes and Projects (PPP) reporting process. The key risk to delivery is a significant flood event causing a change of focus. It should be noted that in recent years, significant floods have occurred in other cities nationally e.g. Sheffield, Hull and locally in the West of England e.g. Somerset levels. In these locations and following the flooding, significant local and national attention and pressure has been placed on authorities to deliver projects that reduce the risk. Bristol has not been affected to the same degree but we are working proactively to reduce the risk of flooding before it occurs.

Public Sector Equality Duties

- 8a) Before making a decision, section 149 Equality Act 2010 requires that each decision-maker considers the need to promote equality for persons with the following "protected characteristics": age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation. Each decision-maker must, therefore, have due regard to the need to:
- i) Eliminate discrimination, harassment, victimisation and any other conduct prohibited under the Equality Act 2010.
 - ii) Advance equality of opportunity between persons who share a relevant protected characteristic and those who do not share it. This involves having due regard, in particular, to the need to --
 - remove or minimise disadvantage suffered by persons who share a relevant protected characteristic;
 - take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of people who do not share it (in relation to disabled people, this includes, in particular, steps to take account of disabled persons' disabilities);
 - encourage persons who share a protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.
 - iii) Foster good relations between persons who share a relevant protected characteristic and those who do not share it. This involves

- having due regard, in particular, to the need to –
- tackle prejudice; and
 - promote understanding.

8b) A separate Equalities Impact Assessment has been completed and approved by Peter Mann (Service Director, Transport) and Jane Hammill (Equalities Representative) for the LFRMS. Overall, the LFRMS is understood to have a low negative impact on equalities issues, and potential benefit to equalities groups as it identifies the communities at highest risk of flooding and advocates an approach for BCC and communities to manage the risk.

Legal and Resource Implications

Legal

The Council, through its elected Mayor and those he may delegate to act on his behalf, is the Lead Local Flood Authority (LLFA) and has a duty under the Flood and Water Management Act 2010 to develop, maintain, apply and monitor a Local Flood Risk Management Strategy (LFRMS).

The Mayor may arrange for decisions to be made on behalf of the LLFA by cabinet, by a cabinet committee, an individual executive member or an officer. Under current arrangements the Mayor has delegated decision making responsibility to the Strategic Director Place, except for the making of key decisions for which he has retained sole responsibility.

Prior to the adoption of a LFRMS the LLFA must undertake a statutory consultation exercise with risk management authorities that may be affected by the strategy and the public.

Case law guides on what constitutes lawful consultation and in summary those who have been consulted must be provided with material upon which a decision is likely to be made, be given enough time for intelligent consideration of that material, be given the opportunity to make considered representations and have their representations conscientiously considered. The Council therefore needs to be satisfied that the consultation process has allowed sufficient time to enable any person or body wishing to make representations to obtain relevant material, to consider it and put their representations to the Council.

(Legal advice provided by Lynne Harvey/Lawyer – PT&R for Service Manager)

Financial

(a) Revenue

This report is an explanation of the strategy that Bristol will take forwards on flooding and therefore makes no specific call for revenue funding.

(b) Capital

Any schemes entered into by or on behalf of Bristol city Council will need to go through the normal process of demonstrating need and source of funding. As noted above, this report aims only to set out the Council's strategy in respect of flood risk and makes no specific request for funds.

(Financial advice provided by Mike Allen/Finance Business partner)

Land

Significant amounts of property could be adversely affected by flood risk, as considered by this Strategy and Action Plan. In general terms, flooding would interfere with use or occupation of any property affected. Those areas may suffer adverse impact in terms of property values, the ability to deliver development, availability of finance. The Council is a very major property owner and occupier. Flooding would materially interfere with use by the public and the Council of any affected property. It may also reduce the value of the Council's assets and increase property management costs.

Personnel

There are no HR implications arising as a result of the proposals.

(Personnel advice provided by Mark Williams, People Business Partner)

Appendices:

Appendix A – LFRMS Summary Report

Appendix B – LFRMS Action plan

Appendix C – Heron Road Show Home Planter information

LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT 1985

Background Papers:

None



Bristol

Local Flood Risk

Management Strategy

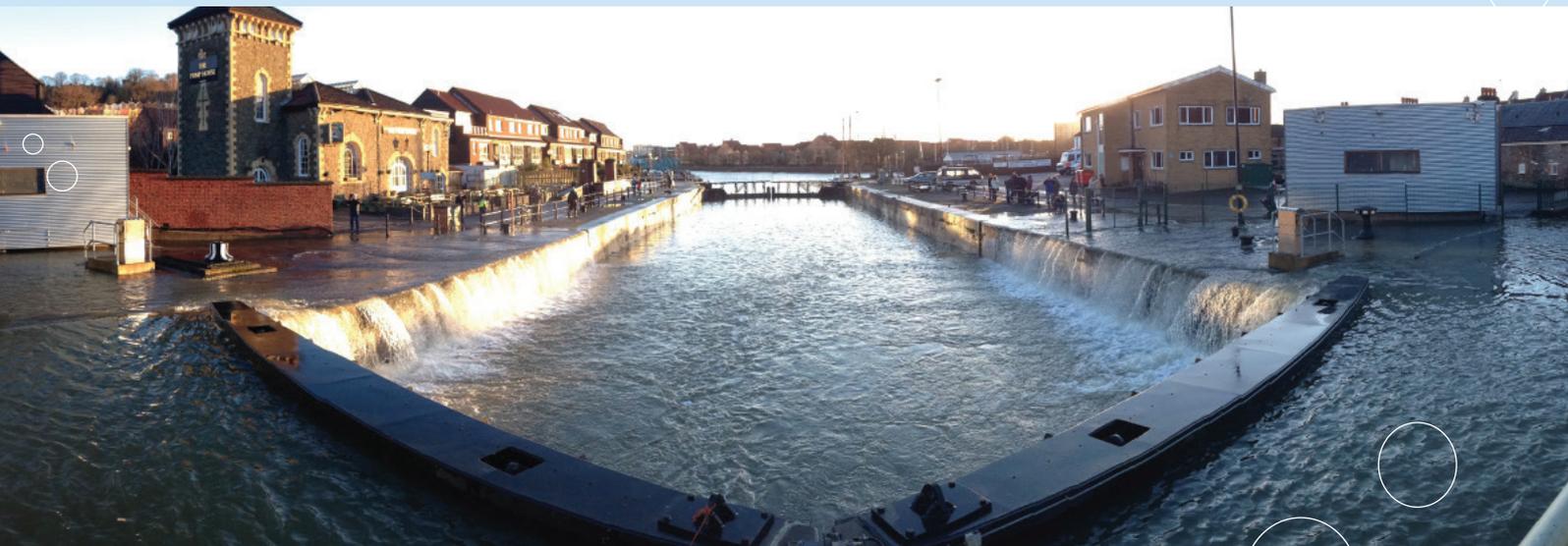
Summary

Summary

Management Strategy

Local Flood Risk

Bristol



Introduction

The widespread flooding experienced across the UK in recent years as well as the 1968 event in Bristol demonstrates the devastating effects that flooding has on people and their homes and communities. Over the last few years, Bristol has been relatively fortunate compared to other areas of the UK. However, we have experienced a number of flood events such as the tidal flooding in 2014 and 1981 as well as the heavy rainfall events in 1979 and 1995. As the Lead Local Flood Authority for the Bristol area, an important duty for Bristol City Council is to produce and maintain a Local Flood Risk Management Strategy. The Strategy sets out our vision for managing flood risk in Bristol together with other organisations that have a role in flood risk management.

Strategy overview

This document presents a summary of the main objectives, measures and actions that are proposed to manage and try to reduce flood risks to the people and places of Bristol. The full version of the draft strategy is available from Bristol City Council by visiting www.bristol.gov.uk/floodstrategy or by calling 0117 922 3206. We are required by law to call the report a 'strategy'. However, our approach to the Local Flood Risk Management Strategy is to maximise delivery by ensuring it is an action plan, with specific objectives and targets that can be met to improve flood risk management in Bristol.

Principles guiding the development of the strategy

We are keen to ensure that the strategy has a clear focus on delivering actions. Therefore it is built around an action plan of activities to be completed by us as the LLFA. However, there is a legal requirement to name the report a strategy.

A number of key guiding principles have influenced the production of this strategy:



Flooding can never be prevented altogether – the strategy is based on assessing the risk and targeting areas at greatest risk – examining both the likelihood and consequences of a flood occurring.



It takes what's termed a 'catchment based approach' which means that actions will be agreed whilst ensuring they do not adversely affect other areas.



Working closely with communities to understand local issues and working with other authorities is essential for the success of the strategy.



Finding ways to fund activities with the support of those who directly benefit from them will be crucial to deliver necessary activities.



Sustainable management of flood risks should be sought taking account of the impact of climate change.



Multiple benefits can also be achieved, for example sustainable drainage systems can also reduce pollution of watercourses – agreed actions should maximise these opportunities.

Who is involved in managing flood risk?

While Bristol is the Lead Local Flood Authority (LLFA) for the Bristol area, there are several other authorities (known as Risk Management Authorities) that have a role in managing the risk of flooding from different sources, so working together is an essential part of this strategy.

The responsibility areas of each partner are shown in the illustration below.



Funding to manage flood risk

To implement this strategy successfully, it is important to understand and plan how to fund its delivery. There are many potential funding opportunities for all of our flood risk management activities. Our general approach to funding is as follows:

- As the Lead Local Flood Authority, we receive national funding (through a local services support grant) to deliver our statutory duties of the Flood and Water Management Act. This pays for staff and professional services that are needed to ensure our responsibilities and duties of the Act are met.
- Bristol City Council revenue funds are used to undertake maintenance. Capital funds are used to make essential capital infrastructure improvements (primarily funding duties under the 1991 Land Drainage Act).
- Flood Defence Grant in Aid is administered by DEFRA and we bid for these funds to improve the standard of protection to existing residential properties. This part-funds schemes with the shortfall in cost made up of third party contributions.
- Bristol City Council will work with the Local Enterprise Partnership to ensure we maximise funding opportunities through the Strategic Economic Plan, Local Growth Fund or other opportunities
- The Local Levy is funding that is administered by the Wessex Regional Flood and Coastal Committee that is similar to Flood Defence Grant in Aid but used to fund local projects that benefit the communities of the Wessex region.
- The Community Infrastructure Levy is allocated locally and we will bid for a share of these funds to deliver flood risk mitigation schemes as and when appropriate.
- We will be seeking further support (in kind or financial) from those who benefit from flood risk management measures. This includes support from members of the public, water companies, electricity and other service providers, local businesses and landowners. This funding could support flood risk management schemes, maintenance and promoting sustainability.

Types of flooding

The flood risk in Bristol comes from a number of sources, which are given below in order of priority:

1. Surface water – rainwater that cannot enter the ground or sewers, but flows across the surface. This presents the most significant risk across Bristol, with approximately 30,000 properties being at risk of flooding, with areas of higher risk in Henbury, Southmead, Ashton and Hengrove

2. Sewer – flooding from underground drainage pipes and sewers, including foul sewage pipes. In an urban setting, this risk is heavily linked with surface water flooding and hence shares similar areas of higher risk with surface water flooding

3. Tidal – flooding from the sea. For Bristol, this is the Severn Estuary and River Avon. We estimate that approximately 1,000 properties are at risk from this type of flooding, which rises to 4,000 properties in the future, with the impacts of climate change

4. Fluvial – flooding from rivers, for example the Rivers Avon, Frome, Malago, Trym, Brislington Brook. A number of flood mitigation structures have been built in Bristol (for example the Malago Interceptors and Northern Stormwater Interceptor) to reduce this risk significantly

5. Groundwater – flooding from water held underground that rises to the ground surface. This is not believed to be a significant risk across Bristol, but there is some risk in lower lying areas such as Ashton and Avonmouth. Some localised flooding can occur from springs in areas such as Horfield, Redland, Brentry and Withywood

From previous research and studies the following list shows the areas currently at highest risk from different types of flooding. These form a priority list for larger schemes and projects. While risks are continually re-assessed, a particular focus of further work will be to understand the risk of groundwater flooding, which has historically been considered a low risk.

All are expected to increase with future climate change projections indicating increases in amounts of rainfall, river flows and sea level .

Flood Source	Priority Number	Area/Location	Types of Properties at risk
Tidal	1	City Centre	Commercial, residential, infrastructure
Surface water/ Ordinary Watercourses	2	Dundry Hills	Mostly residential, some schools and commercial areas
Tidal, fluvial	3	Avonmouth	Commercial, residential, infrastructure
Surface water, tidal, river, groundwater	4	Ashton	Residential, commercial and industrial
Surface water	5	Southmead	Mostly residential, some commercial
Tidal	6	St Philips Marsh	Commercial and industrial
Surface water	7	Bamfield Road	Mostly residential, some infrastructure

Strategy outline

In line with the Environment Agency's National Strategy, objectives have been considered from a flood risk perspective for Bristol City Council's governance area. The following pages detail:

- The National objective set by the Environment Agency
- The Local objective (how we are going to meet the national objective)
- The Measures we aim to take to meet the local objective
- The more specific Actions we propose to deliver these measures



Objective 1

National objective:

- **Understand the Risk**

Local objective:

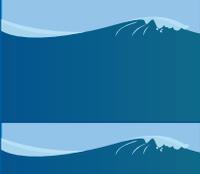
- **Gain a greater understanding of the flood risks posed to Bristol and its people and places**

Measures

Much research has already been carried out but further work is needed and these measures will help prioritise areas most at risk.

- A.** Identify and prioritise local flood risks, taking climate change projections into account
- B.** Work in partnership with the risk management authorities to identify and prioritise other sources of flood risk
- C.** Learn from real-life flooding by recording and investigating events
- D.** Gather, manage and share high quality data to help understand the risk of flooding
- E.** Create and maintain the Flood Risk Asset Register to identify key flood risk assets and who is responsible for their maintenance

Local Objective 1 - Actions

Action	Short term 2014 - 2016	Medium term 2016 - 2020	Long term 2020 onwards
Complete integrated Ashton flood risk study in partnership with Environment Agency and Wessex Water			
Complete business case for the River Avon Strategic Defences project			
Undertake Avonmouth/Severnside flood defence study			
Undertake citywide groundwater risk assessment			
Undertake vulnerability mapping exercise using results of the Surface Water Management Plan			
Update and procure Flood Risk and Drainage Advice and Design consultancy Framework			
Formulate methodology to identify significant flood risk assets for the Flood Risk Asset Register			
Undertake trial comprehensive local flood-risk asset surveys			
Install trash screen monitors and rain gauges			
Further develop the flood events records database			
Publish appropriate datasets such as the Flood Risk asset Register on the Council's web site			
Update and procure the asset survey contract, ensuring national standards are met			

Objective 2

National objective:

■ Manage the Likelihood

Local objective:

■ Actively manage flood risk infrastructure to reduce the likelihood of flooding causing harm to people and damage to society, the economy and the environment

Bristol is one of the UK's ten Flood Risk Areas so the measures suggested here seek to further reduce the risk of flooding.

- A.** Improve our flood risk management maintenance procedures
- B.** Use our understanding of flood risk in Bristol to ensure limited resources are targeted at areas of highest risk
- C.** Seek partnership working opportunities so that those that benefit from flood risk assets contribute towards their planning and management
- D.** Encourage use of green areas and waterways to reduce the risk of flooding and contribute towards wider benefits

○ The central area of Bristol is at risk of flooding from the tide, with approximately 1,000 properties at risk currently

Bristol is at significant risk from surface water flooding - approximately 30,000 properties have been identified as at risk

Local Objective 2 - Actions

Action	Short term 2014 - 2016	Medium term 2016 - 2020	Long term 2020 onwards
Update and procure watercourse maintenance contract	█		
Continue maintenance of ordinary watercourses and associated structures	█	█	█
Identify and prioritise watercourse structural improvement requirements	█		
Implement minor land drainage works as appropriate	█	█	█
Deliver Dundry flood alleviation scheme	█		
Deliver Sandburrows Road flood alleviation scheme	█	█	
Deliver Bamfield flood alleviation scheme			█
Deliver Henbury flood alleviation schemes			█
Deliver Scotland Lane flood alleviation scheme	█	█	
Deliver Willway Street culvert tide flap replacement	█		
Progress Southmead Green Streets water sensitive design feasibility work including Stanton Road and Trowbridge Road high risk areas	█		
Formalise process for consulting on Risk Management Authority led schemes to maximise inclusion of Sustainable Drainage Systems and green areas	█		
Identify and prioritise Floating Harbour flood risk asset improvement requirements	█	█	
Utilise strategic board groups to identify opportunities for partnership working and funding contributions	█	█	█
Develop process for risk based approach to highway gully maintenance and leaf clearance	█		
Follow established process for consenting works to ordinary watercourses	█	█	█
Complete green spaces study to assess the importance of existing green spaces on flood risk management in the city		█	

Objective 3

National objective:

■ Help People Manage Their Own Risk

Local objectives:

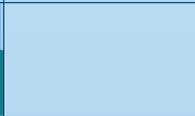
■ Increase public awareness and encourage communities to take action to manage the risks that they face

■ Understand communities flooding concerns and priorities, and gather knowledge based on their perception of flooding

These measures will help people understand the risks to their local area and find ways to reduce the risk of flooding themselves, as well as enabling the authorities to better understand the concerns and needs of each community.

- A.** Work with existing groups, networks and agencies to engage with communities at risk of flooding
- B.** Involve local people in flood risk management activities taking place in their community
- C.** Help communities understand the benefit of flood plans to improve community resilience and preparedness for flooding
- D.** Use a range of communication techniques to effectively reach a diverse audience

Local Objective 3 - Actions

Action	Short term 2014 - 2016	Medium term 2016 - 2020	Long term 2020 onwards
Introduce proposed flood alleviation schemes to neighbourhood forums			
Identify existing groups, networks and agencies that we can use to engage with communities			
Produce programme of community engagement activities including flood plan development			
Produce and publish improved Lead Local Flood Authority section on Bristol City Council's website			
Ensure final version and future updates of local strategy are freely available to the public in a variety of formats			
Produce and develop a community engagement activity to manage highway gullies and debris clearance			

Objective 4

National objective:

■ Prevent Inappropriate Development

Local objective:

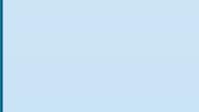
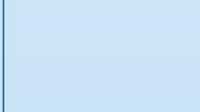
■ Promote sustainable development that seeks to reduce flood risk and includes a consideration of climate change

These measures seek to ensure new developments are assessed for flood risk and actively contribute to reducing the risk of flooding.

- A.** Inform planning policy to ensure flood risk to new and existing developments is effectively identified and future land use is appropriately considered
- B.** Ensure sustainable drainage solutions are included in all new developments
- C.** Ensure new developments are better protected and able to withstand flooding where appropriate
- D.** Work with new developments to reduce flood risk and incorporate Water Sensitive Urban Designs to provide multiple benefits
- E.** Co-ordinate responses to planning applications in partnership with risk management authorities to ensure new developments have an appropriate and consistent regard to flood risk
- F.** Work in partnership to identify opportunities for contributions to flood mitigation schemes

Climate change presents a significant challenge to Bristol, from an increase in occurrence of heavy rainstorms to increased sea levels. Approximately 4,000 properties are predicted to be at risk from tidal flooding in the year 2110

Local Objective 4 - Actions

Action	Short term 2014 - 2016	Medium term 2016 - 2020	Long term 2020 onwards
Follow established process on consultation of planning applications from a flood risk perspective			
Formalise process for reviewing planning applications following development control standards			
Establish the Sustainable Drainage Systems Approving Body subject to enabling Government legislation			
Implement an interim SAB approach including production of Local SuDS Guidance, requirements and associated Planning Guidance Note. Implement drainage adoption on an optional basis with additional requirements, exclusions and charges to be determined			
When established, SuDS Approving Body will evaluate drainage applications. Adopt, charge for and maintain those SuDS which the SAB has duty to adopt			
Formalise process for consultation with Risk Management Authorities, City Docks and other relevant teams and authorities to seek consistency of approach and advice provided			
Inform Local Plans preparation to ensure flood risk is appropriately considered			
Update the Strategic Flood Risk Assessment with results from recent studies			
Ensure Flood Team involvement with, and inform distribution of Community Infrastructure Levy and other funding sources			
Identify contributions to flood mitigation schemes through development management process			
Produce best practice guide to establish water sensitive urban design in Bristol			
Develop risk based enforcement procedures for auditing approved applications			

Objective 5

National objective:

■ Improve flood prediction, warning and post flood recovery

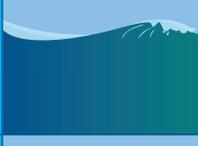
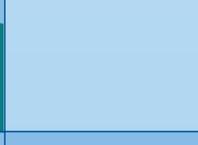
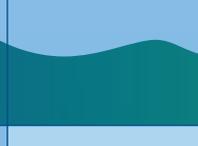
Local objective:

■ Improve preparedness for flood events and post flood recovery

Flooding within Bristol can never be prevented entirely. These measures seek to ensure that there is an effective response to flooding when it occurs.

- A.** Monitor and analyse warnings issued by the Environment Agency and Met Office to co-ordinate and prepare our response to extreme weather events.
- B.** Use our local knowledge and technical expertise to inform decisions made in advance of a potential flood incident.
- C.** Work with partners to support those who have been affected by flooding.
- D.** Review Lead Local Flood Authority response to flood events and identify opportunities to improve community flood resilience.

Local Objective 1 - Actions

Action	Short term 2014 - 2016	Medium term 2016 - 2020	Long term 2020 onwards
Continue to provide advice regarding warnings issued by the Flood Forecasting Centre to the wider authority and other stakeholders			
Undertake functions from Section 19 of the Floods and Water Management Act, and endeavour to investigate smaller flood incidents where appropriate			
Identify and Undertake training to improve flood knowledge and preparedness of the Lead Local Flood Authority team			
Setup procedures with the Bristol City Council working group to use existing studies to help improve knowledge and flood prediction			
Attend Environment Agency community flood plan meetings to improve knowledge and help improve community flood resilience			
Use the Lead Local Flood Authority working group to promote and co-ordinate flood response and preparedness across key teams within the authority			
Develop and promote the use of flood data to inform emergency traffic management procedures			

Action No.	LFRMS Objective	Relevant LFRMS Measure(s)	Action Title	City Transport Business Plan Code	Business Plan Activity	2014-16	2016-20	2020+	Progress	Progress notes 12/08/15
1.1	Understand the risk	1A, 1B, 1C	Complete integrated Ashton flood risk study in partnership with EA and WW	ST1_02	Ashton Flood Risk Study				On schedule	Draft scoping notes produced, EA to do the same so that it can be worked up to a brief for a consultancy to be managed by BCC
1.2	Understand the risk	1A, 1B	Complete business case for the River Avon Strategic Defences project	ST1_01	River Avon Strategic Defences				On schedule	PM in place, project being progressed with the EA with regular attendance at Brunel House BCC office. FRM Strategy procurement process due to commence in September
1.3	Understand the risk	1A, 1B	Undertake Avonmouth/Sevenside flood defence study	ST1_05	Avonmouth/Sevenside FDO				On schedule	Environmental surveys underway. EA proposed to perform PM role for next phase of works (completing a business case for LEP funding)
1.4	Understand the risk	1A, 1B	Update and procure Flood Risk and Drainage Advice and Design consultancy Framework	Completed 2014-15	Completed 2014-15				Completed	Completed
1.5	Understand the risk	1A, 1B, 1E	Formulate methodology to identify significant flood risk assets for the FRAR	Not this year	Not this year				On schedule	Programme scheduled for 2016 between AJH and Beth Chaffey, Policy and Project Officer – Strategy, Planning and Governance
1.6	Understand the risk	1D, 1E	Undertake trial comprehensive local flood-risk asset surveys	ST1_09	FRAR Super Survey				On schedule	Completed Super Surveys at Southmead, Southville/Ashton, St George and Bamfield
1.7	Understand the risk	1C, 1D	Install trash screen monitors and rain gauges	ST1_11	Monitors and Rain Gauges				Completed	Completed. Flow monitors installed at Claypiece Road, Tanorth Road and Newland Walk. River Avon level monitor installed. Rain gauges installed at south Bristol site Bouchier Gardens and north Bristol at Filton Golf Course.
1.8	Understand the risk	1A, 1B, 1C, 1D	Develop the flood events records database	ST1_08	Maintain and develop data catalogue				Behind schedule	Being initiated through Dorset SWIMS by AJH - awaiting conformation of SWIMS commencement by Dorset CC
1.9	Understand the risk	1B, 1D, 3D	Publish appropriate datasets on the Council's web site	ST1_08	Maintain and develop data catalogue				Completed	The Bristol Flood Risk Asset Register was made publicly available on the BCC website
1.10	Understand the risk	1D, 1E, 2A	Update and procure the asset survey contract, ensuring national standards are met	Completed 2014-15	Completed 2014-15				On schedule	Interim approach in place to explore the market. Due to Super Surveys being complete, no pressure on delivering larger jobs so majority of commissions at present are within the direct award spend threshold
2.1	Manage the likelihood	2A, 2B	Update and procure watercourse maintenance contract	ST1_17	Watercourse Maintenance				Behind schedule	Interim approach in place to deliver this service until contract procurement process is completed. Procurement teams current workload is delaying the contract
2.2	Manage the likelihood	2A, 2B	Continue maintenance of ordinary watercourses and associated structures	ST1_17	Watercourse Maintenance				On schedule	Interim approach in place to deliver this service
2.3	Manage the likelihood	2A, 2B, 1A, 1B	Identify and prioritise watercourse structural improvement requirements	ST1_17	Watercourse Maintenance				On schedule	First batch completed, future and ongoing improvements to be delivered once contractor appointed and funds available
2.4	Manage the likelihood	2A, 2B	Implement minor land drainage works as appropriate	ST1_13	Minor Flood Schemes				On schedule	Ongoing, scheme designs being progressed on schedule
2.5	Manage the likelihood	2B, 2D, 1A	Deliver Dundry flood alleviation scheme	Completed 2014-15	Completed 2014-15				Completed	Completed
2.6	Manage the likelihood	2B, 2C, 2D, 1A	Deliver Sandburrows Road flood alleviation scheme	N/A	N/A				On schedule	To be undertaken by third party developer). Working with developer, ongoing
2.7	Manage the likelihood	2B, 2C, 2D, 1A	Deliver Scotland Lane flood alleviation scheme	N/A	N/A				On schedule	Being delivered by Highways and Traffic
2.8	Manage the likelihood	2B, 2C, 2D, 1A	Deliver Willway Street culvert tide flap replacement	ST1_15	Willway Street tide flap restoration				On schedule	Improvements to access have been completed. Tender documents for the replacement of the flap and detailed designs in progress. Awaiting confirmation of EA funding
2.9	Manage the likelihood	2B, 2C, 2D, 1A,	Progress Southmead water sensitive design feasibility work including Stanton Road and Trowbridge Road high risk areas	ST1_18	Southmead Green Streets				On schedule	Designs and community engagement completed. Due to be constructed in 2016
2.10	Manage the likelihood	2C, 2D, 4B, 4D, 4E, 1B	Formalise process for consulting on RMA led schemes to maximise inclusion of SUDS and green areas	ST1_23	Implement Local SuDS Guidance				On schedule	Overall on schedule - good progress made with Housing Delivery but slower progress with other teams
2.11	Manage the likelihood	2B, 2C, 1A, 1E	Identify and prioritise Floating Harbour flood risk asset improvement requirements	N/A	N/A				On schedule	Being delivered by Marine Services. First iteration of risk assessment of critical flood risk docks assets completed as part of River Avon Project (ST1_2)
2.13	Manage the likelihood	2A, 2B, 1A	Develop process for risk based approach to highway gully maintenance	ST1_27	Highways and Traffic GIS				On schedule	Gully blockage data analysed via GIS to find those most susceptible to blocking with silt along with analysis of nearby tree canopy cover assessing where is more likely to become covered with leaf and tree debris. Data collated will inform gully contract renewal when applicable.
2.14	Manage the likelihood	2B	Follow established process for consenting works to ordinary watercourses	ST1_25	Flood Defence Consents				On schedule	Application form for OWC available on BCC website with payment details. Payments now using EZPZ process which will make the process more efficient
3.1	Help people manage risk	3A, 3B, 2C, 5D	Introduce proposed flood alleviation schemes to neighbourhood forums	Various	Various				On schedule	Embleton Road SuDS scheme communicated in September Southmead Forum.
3.2	Help people manage risk	3A, 5C	Identify existing groups, networks and agencies that we can use to engage with communities	ST1_31	LFRMS Community Engagement				On schedule	Expanded list of contacts through Neighbourhood Officers by indicating areas at greater flood risk and them suggesting relevant contact groups in their respective areas.
3.3	Help people manage risk	3C, 3D	Produce and publish improved LLFA section on BCC website	Completed 2014-15	Completed 2014-15				Completed	Completed with sections including Managing flood risk, Flood risk, drainage and development, Flooding emergencies and Flood risk evidence for planning policy.
3.4	Help people manage risk	3D	Ensure final version and future updates of local strategy are freely available to the public in a variety of formats	Completed 2014-16	Completed 2014-16				Completed	Available on the BCC website, hard paper copy at Neighbourhood Forums
4.1	Prevent inappropriate development	4A, 4B, 4C, 4D, 4E	Follow established process on consultation of planning applications from a flood risk perspective	ST1_03	Enabling sustainable development				On schedule	Local standing advice and consultation matrix produced
4.2	Prevent inappropriate development	4A	Formalise process for reviewing planning applications following development control standards	ST1_03	Enabling sustainable development				On schedule	Flow charts produced as prompts for aspects to consider on review of applications
4.3	Prevent inappropriate development	4B, 4C, 4D, 2A	Implement an interim SAB approach including production of Local SuDS guidance, requirements and associated Planning Guidance Note. Implement drainage	ST1_03	Enabling sustainable development				Completed	Interim planning practice guidance note was produced providing planning guidance. Adoption process possible through Parks Department.
4.4	Prevent inappropriate development	4E, 1B, 1D	Formalise process for consultation with RMA's, City Docks and other relevant teams and authorities to seek consistency of approach and advice provided	ST1_03	Enabling sustainable development				On schedule	Standing advice recommends to Planning Case Officers when to contact Lower Severn Internal Drainage Board directly.
4.5	Prevent inappropriate development	4A, 1A, 2B	Inform Local Plans to ensure flood risk is appropriately considered	ST1_22	SFRA and Local Plan Update				On schedule	Assistance being provided to the Joint Spatial Plan
4.6	Prevent inappropriate development	4A	Update the SFRA with results from recent studies	ST1_22	SFRA and Local Plan Update				Behind schedule	Joint Spatial Plan for wider WoE area underway with other LA's and Planning Policy Team
4.7	Prevent inappropriate development	4F	Ensure Flood Team involvement with, and inform distribution of CIL and other funding sources	ST1_03	Enabling sustainable development				Behind schedule	Bristol Green Capital funds contributing towards Southmead Embleton Road SuDS project. Engagement with CIL awaiting outcome of River Avon Strategic Defences project to ensure consistent and efficient engagement
4.8	Prevent inappropriate development	4F, 2C	Identify contributions to flood mitigation schemes through development management process	ST1_03	Enabling sustainable development				On schedule	
4.9	Prevent inappropriate development	4B, 4C	Develop risk based enforcement procedures for auditing approved applications	ST1_21	LLFA Consultation Process				On schedule	application details. Review of PCO consultation also assessed as appropriate against requirements outlined in standing advice matrix. Audit requirement for all Major applications to have a second review by a FRM Team member to ensure appropriate response provided.
5.1	Flood warning etc.	5A, 5B, 5C, 1B	Continue to provide advice regarding warnings issued by the Flood Forecasting Centre to the wider authority and other stakeholders	ST1_16	Flood warnings				On schedule	Historical review of response to extreme weather events conducted in FRM Team to enhance and improve on emergency response procedures already in place to add consistency. Review of the emergency response procedure carried out with the LLFA WG and Flood Emergencies.
5.2	Flood warning etc.	5D, 1C	Undertake functions from Section 19 of the FWMA, and endeavour to investigate smaller flood incidents where appropriate	ST1_30	Flood Investigations				On schedule	FRM Team readily available when adverse weather hits to go and inspect with cover provided during times when potential flooding is possible
5.3	Flood warning etc.	5D	Identify and Undertake training to improve flood knowledge and preparedness of the LLFA team	Various	Various				On schedule	NEC contract training to be completed in September
5.4	Flood warning etc.	5B, 1D	Setup procedures with the BCC working group to use existing studies to help improve knowledge and flood prediction	ST1_32	LLFA Working Group				On schedule	Flood Studies that have been conducted presented to the LLFA WG to enhance knowledge internally within interested parties on BCC. Explaining model outputs, flood schemes, identifying high risk areas to inform and increase flood protection.
5.5	Flood warning etc.	5C, 5D, 3A, 3C	Attend Environment Agency community flood plan meeting(s) to improve knowledge and help improve community flood resilience	ST1_31	LFRMS Community Engagement				Behind schedule	Environment Agency to notify JS in FRM Team when flood plan meetings are due nad JS to attend and take back useful information and processes from this.
5.6	Flood warning etc.	5A, 5B, 5C, 5D	Use the LLFA working group to promote and co-ordinate flood response and preparedness across key teams within the authority	ST1_32	LLFA Working Group				On schedule	BCC proper Flood Risk Assessments complete and further BCC owned buildings under review. LLFA WG meetings used to discuss and plan with key BCC teams our preparations in advance of extreme weather and ahead of high tides. Reaction to events also reviewed and potential improvements noted for future events. Covered in the quarterly meetings.
5.7	Flood warning etc.	5B, 5D, 1D	Develop and promote the use of flood data to inform emergency traffic management procedures	ST1_27	Highways and Traffic GIS				On schedule	Record of purely highway flooding incidents developed based on collating BCC records including Lagan record from CSC. Used to determine successive roads that flood during different flood events to inform road closures and diversion routes. Interpreted with Network Management Team.

Project Details

Project Number	SC_17U
Project Name	Heron Road Show Home Planter
Project Manager	Matthew Sugden
Project Sponsor	Patrick Goodey

Document Details

Version	Status (Draft or Approved)	Date	Author/Editor	Details of changes
1.0	Approved	16/02/2015	MS	
2.0	Approved	17/08/2015	PG	Include photo of constructed planter

Background

In order to pilot SuDS serving individual properties, an opportunity has arisen with the Housing Delivery team to install a planter to collect rainwater from the downpipe. The rainwater from the site at present discharges to a combined sewer, which in turn provides additional justification for installation of the planter as it would slow water down and reduce the risk of flooding.

Objectives

The main objective is to install a planter to collect rainwater discharged from the downpipe of 56 Heron Road, Easton. In order to meet this aim, the following objectives will be completed:

- Discuss and agree the installation of such a device with Housing Delivery
- Design planter based on basic hydrology calculations and to recommend appropriate plants
- Obtain cost estimate from on-site contractor
- Subject to approval, facilitate construction of the planter
- The planter is to be funded by the Flood Team due to budget pressures of the Housing team and given it is a trial feature

Deliverables

- Detailed Design of planter
- Construction of planter

17/08/2015 Update:

Below photo is of the completed planter, pre-planting:



Benefits

The project will highlight the opportunities of SuDS serving individual properties and act as evidence of our commitment to installing such features.

Major dependencies

Cost, commitment of delivery team to install the feature

Stakeholders

Housing Delivery team