

# Cabinet

## Supplementary Information



**Date:** Tuesday, 9 March 2021

**Time:** 4.00 pm

**Venue:** Virtual Meeting - Zoom Committee Meeting  
with Public Access via YouTube

**8. Bristol Avon Flood Strategy**  
**Updated Appendix B1 attached**

**(Pages 2 - 11)**

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**Date:** Wednesday, 03 March 2021





Bristol City Council

# Bristol Avon Flood Strategy

Responses to consultation analysis

January 2021



**Better protecting people and property from flooding**

Future-proofing Bristol and neighbouring communities; enabling a greener, more active city; and unlocking our city's potential.

# Table of Contents

<b>1</b>	<b>Introduction</b> .....	<b>1</b>
<b>2</b>	<b>Public Consultation</b> .....	<b>1</b>
2.1	We asked, you said, we will.....	2
2.2	Strategic Environmental Assessment Consultation.....	7
<b>3</b>	<b>Environment Agency Assurance</b> .....	<b>8</b>
<b>4</b>	<b>Next Steps</b> .....	<b>8</b>

# 1 Introduction

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Bristol and its neighbouring communities have grown and thrived on the banks of the River Avon. However, people and property face an increasing risk of flooding. Bristol City Council (BCC) and the Environment Agency (EA) are working together to deliver a long-term plan to better protect homes, businesses and infrastructure from flooding from the River Avon. This is a unique opportunity to enhance the river for all by creating a more resilient, active and sustainable city that can meet the future needs of its residents, businesses and visitors.

The Bristol Avon Flood Strategy sets out a strategic long-term plan for managing flood risk from the River Avon to Bristol and its neighbouring communities. The Strategy has been developed by Bristol City Council (BCC), with support from the Environment Agency, and consultants Arup and AECOM.

# 2 Public Consultation

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Between 26<sup>th</sup> October and 20<sup>th</sup> December 2020, we consulted on the Bristol Avon Flood Strategy sharing the SOC technical document, supporting evidence base and Strategic Environmental Assessment. The consultation raised awareness on the need for the Strategy and sought views on the leading strategic approach to inform our Cabinet consideration as to whether to adopt the Strategy.

A three-week period of early engagement with residents and businesses most at risk of flooding ran from 5<sup>th</sup> to 26<sup>th</sup> October. This ensured those most affected have additional time to respond to the consultation and have any questions answered.

Consultee responses have been reviewed and analysed, 578 responses were received to the survey and the results can be seen in our Bristol Avon Flood Strategy cabinet report Appendix B - consultation report. The following sections provide the council's response to the most frequently recurring suggestions and issues raised to each of the free text questions posed through the consultation survey. Where common themes were repeated over multiple questions they are not repeated here.

## 2.1 We asked, you said, we will

We asked	You said	We will
<p>Do you have any other suggestions for improvements to public spaces and the riverside in conjunction with flood defences that you think we should consider?</p>	<p>Incorporate opportunities for <b>recreation and amenity</b> value such as seating areas, access points to the river, meeting points, skate parks, cafes and riverside walks.</p>	<p>Our vision is to design measures that work for Bristol year-round, and provide benefits on the vast majority of days when river levels are normal.</p> <p>We will develop the emerging design of measures with input from the community and other stakeholders with an interest. We will contact individuals and groups that have expressed an interest in us doing so once we reach the appropriate design phase.</p> <p>Further rounds of engagement and consultation are planned as the first phase of the Strategy progresses to design, consenting and construction. For example, when initial designs are drawn up to help develop the proposals at a local level. Feedback will inform the case and then design of the first phase of measures.</p>
	<p>Incorporate <b>walking and cycling</b> in the proposals.</p>	<p>Our vision involves creating a greener, more active city. Creating and improving flood defences gives us an opportunity to improve walking and cycling routes along the River Avon. Links could be created with other parts of the city, helping people get to homes, work and recreation more easily, as well as making the riverside more accessible.</p> <p>We will design measures with input from the community and other stakeholders with an interest with further rounds of engagement and consultation planned. We will contact individuals and groups that have expressed an interest in us doing so once we reach the outline design phase.</p>
	<p>Ensure <b>safety</b> of people using the area to avoid vertical drops, provide fencing and life chains where necessary, use suitable lighting, and implement flood warnings.</p>	<p>We will work with the Harbour, Highways and Planning Authorities to ensure safety consideration are adequately built into any design proposals. We will continue to work in partnership with the Environment Agency and Met Office to monitor river levels and rainfall and respond accordingly with flood forecasts and warnings.</p>
<p>The river environment is very varied along its length. We are keen to hear your comments specific to each or</p>	<p><b>Enhance and protect</b> existing open space and green space such as</p>	<p>Our vision includes the ambition to enable a greener city. In areas where more space is available, defences could take the form of a green space that provides wildlife or recreation value, so that it can be enjoyed on the majority of days when there is no risk of flooding.</p>

We asked	You said	We will
<p>any of the areas identified as needing some form of flood defence.</p> <p><b>Cumberland Basin and Ashton</b></p>	<p>parkland and maintain a “natural” feel to those areas</p>	<p>We will design measures with input from the community and other stakeholders with an interest with further rounds of engagement and consultation planned. We will contact individuals and groups that have expressed an interest in us doing so once we reach the outline design phase.</p>
	<p><b>Avoid building on areas at risk of flooding</b> such as around Cumberland Basin, avoid over-development and keep flood plains connected to the river</p>	<p>Flood defences in this area are required whether or not new development is proposed and constructed. Existing homes and businesses are at risk and we need to provide new defences to better protect them. If new homes are proposed in the area, they will also need to be adequately safe from flooding as prescribed by national and local planning policy.</p> <p>As the Lead Local Flood Authority, we will continue in partnership with the Environment Agency in our regulatory roles over the local and strategic oversight of flood risk to ensure that flood risk is appropriately considered in any new development proposals.</p>
	<p>Incorporate <b>terracing</b> in the area to create a solution that is sympathetic to the surroundings and to provide public open space</p>	<p>Our place making opportunity report identified terracing as a concept that might be appropriate in parts of this area.</p> <p>We will design measures with input from the community and other stakeholders with an interest with further rounds of engagement and consultation planned. We will contact individuals and groups that have expressed an interest in us doing so once we reach the outline design phase.</p>
	<p><b>Maintain and better protect</b> existing assets such as flood gates, paths, Underfall Yard</p>	<p>Bristol’s existing flood defence infrastructure is ageing. In partnership with the Environment Agency, we will continue to maintain existing flood gates and other flood defences while we prepare to upgrade or replace assets where it is required.</p> <p>Proposals will protect historic assets at risk of flooding such as the Scheduled Ancient Monument of Underfall Yard.</p>
<p>The river environment is very varied along its length. We are keen to hear your comments specific to each or any of the areas identified as</p>	<p><b>Restore the Chocolate Path</b> and improve and protect it so that it is more resilient to flooding</p>	<p>Repair works currently ongoing on Cumberland Road will reinstate the historic harbourside railway track and Chocolate Path whilst allowing for future flood defence requirements. We will continue to develop proposals that allow continued use of the path as a walking and cycling link in accordance with our vision to enable a more active city.</p>

We asked	You said	We will
<p>needing some form of flood defence.</p> <p><b>Cumberland Road, Commercial Road and Clarence Road</b></p>		
<p>The river environment is very varied along its length. We are keen to hear your comments specific to each or any of the areas identified as needing some form of flood defence.</p> <p><b>St Philip's and Bath Road</b></p>	<p><b>Enhance and protect</b> existing open space such as Spark Evans Park and use regeneration potential to take opportunity to create a new green space, improve riverside habitats, and increase biodiversity</p>	<p>Our vision includes the ambition to enable a greener city. Our proposals do not impact on Spark Evans park and investment in flood defences brings potential to enhance existing areas such as this.</p> <p>We will design measures with input from the community and other stakeholders with an interest with further rounds of engagement and consultation planned. We will contact individuals and groups that have expressed an interest in doing so once we reach the outline design phase.</p>
<p>The river environment is very varied along its length. We are keen to hear your comments specific to each or any of the areas identified as needing some form of flood defence.</p> <p><b>Netham and Feeder Road</b></p>	<p>Improve <b>walking and cycling</b> facilities along Feeder Road to make it safer, and integrate walking and cycling links with defences</p>	<p>Creating and improving flood defences gives us an opportunity to improve walking and cycling routes along the River Avon and Feeder Road.</p> <p>We will design measures with input from the community and other stakeholders with an interest with further rounds of engagement and consultation planned. We will contact individuals and groups that have expressed an interest in us doing so once we reach the outline design phase.</p>
<p>The river environment is very varied along its length. We are keen to hear your comments specific to each or any of the areas identified as needing some form of flood defence.</p>	<p>Incorporate <b>natural flood management</b> such as green corridors, tree planting, reconnecting the river with the floodplain, and other interventions further upstream</p>	<p>The riverside environment upstream of Netham is more natural in feel than city central areas. Measures will be designed to be sympathetic to the landscape in which they are required.</p> <p>We will design measures with input from the community and other stakeholders with an interest with further rounds of engagement and consultation planned. We will contact individuals and groups that have expressed an interest in us doing so once we reach the outline design phase.</p>

We asked	You said	We will
<p><b>St Anne's, Crews Hole, Hanham, Keynsham and Swineford</b></p>		
<p>The river environment is very varied along its length. We are keen to hear your comments specific to each or any of the areas identified as needing some form of flood defence.</p> <p><b>Pill, Shirehampton and Sea Mills</b></p>	<p><b>Protect</b> the railway line including access to the station</p>	<p>Access to the railway station at Sea Mills is impacted during particularly high river levels. We will consult with Network Rail and the local community when developing outline designs to ensure benefits to the area are maximised.</p>
<p>Do you have any comments about the other measures or strategic approaches that we considered but are not recommending taking forward?</p>	<p>Use <b>natural flood management</b> techniques such as upstream storage, tree planting, wetlands, land management practices and flood plain restoration</p>	<p>Measures to reduce peak river flows from upstream will not reduce tidal flood risk to central Bristol and the large size of the upstream river catchment makes this currently impractical for the Bristol Avon. Flood defences to contain flooding are needed as outlined in the Strategic Outline Case.</p> <p>However, we acknowledge the level of support for such measures and agree that benefits can be realised by introducing such techniques. This is a long-term strategy, and such measures to reduce peak river flows could potentially reduce some of the predicted impact of climate change. We will continue work with neighbouring authorities, the Environment Agency and other organisations such as the Avon Catchment Partnership to take a catchment wide approach, combined with any new evidence or opportunities as they arise to help reduce peak flows from upstream. Furthermore, consideration will also be given, where possible, to securing a wider range of ecosystem services, to support the objectives of Government's 25 Year Environment Plan.</p> <p>We will together seek opportunities to implement natural flood management measures and funding to deliver them. For example at the time of writing (Jan 2021), we are leading on the submission of partnership funding bid with South Gloucestershire Council through the Government's Flooding and Coastal Resilience Innovation programme. The bid is focused on using green infrastructure and natural flood management schemes to reduce peak river flows in the river Frome catchment, a tributary of the Bristol Avon.</p>

We asked	You said	We will
	Use a <b>tidal barrier or barrage</b> instead of the integrated defences proposed in the Strategic Outline Case	<p>A tidal barrage (permanently damming the river, such as the Cardiff Bay barrage) was scoped out early on whilst assembling the long list of strategic approaches because a barrage would create a non-tidal narrow body of water in the Gorge which would increase the risk of flooding from high flows coming down the River Avon. We will not progress further consideration of a tidal barrage for the reasons provided in the Strategic Outline Case.</p> <p>A tidal barrier (closing in advance of forecast flooding, such as the Thames Barrier in London) was included in the short list of strategic options but is not proposed at this stage. There are a number of reasons:</p> <ul style="list-style-type: none"> <li>• Because extensive flood defences would still need to be built in the city centre to contain river flows trapped at times the barrier was closed, despite testing barrier locations as far downstream as possible.</li> <li>• Because a barrier would cost significantly more (c£600m) to construct than the phased raised defences proposed by the strategy, more than double the cost (plus the additional cost of extensive flood defences upstream in the city centre).</li> <li>• Because a barrier would have significant operation and maintenance requirements.</li> </ul> <p>We will continue to progress the Strategic Outline Case as proposed at this stage for the reasons stated above, noting that the adaptive nature of defences does not preclude future decisions being taken on incorporating alternative solutions</p>
If you have any other comments or suggestions please provide them	Ensure <b>community involvement</b> to ensure residents thoughts and understanding are considered, use social media to enable factual discussion, involve interest groups and <b>raise awareness</b> of the risk of flooding	<p>The consultation has raised awareness of the council of the many interest groups, individuals, businesses and organisations with an interest in the emerging proposals and we have made many new relationships as a result. The consultation also used social media as an effective tool to raise awareness.</p> <p>We will continue to use social media as a tool for communicating progress and inviting participation in developing proposals. We will develop the emerging design of measures with input from the community and other stakeholders with an interest. We will contact individuals and groups that have expressed an interest in us doing so once we reach the appropriate design phase.</p>

We asked	You said	We will
		<p>Further rounds of engagement and consultation are planned as the first phase of the Strategy progresses to design, consenting and construction. Feedback will inform the case and then design of the first phase of measures.</p> <p>We will continue to work with partners to promote residents and businesses to find out if they are at risk of flooding, how to better protect themselves from future flooding, what we will do to help and how to report flooding, such as <a href="http://www.bristol.gov.uk/crime-emergencies/flooding">www.bristol.gov.uk/crime-emergencies/flooding</a></p>
	<p>Delivery of the Strategy will require a <b>collaborative approach</b> with prospective public and private partners</p>	<p>The council and Environment Agency will continue to work together with the existing statutory stakeholder working group. We will also explore creating a prospective partner working group to bring in other organisations and individuals.</p>
	<p>Plan ahead and <b>don't delay</b></p>	<p>Producing the Strategic Outline Case has taken time and significant investment. The completion of the consultation and technical approval of the work undertaken is a major milestone that we have reached.</p> <p>Following scrutiny by Cabinet and necessary key decision to adopt the Strategy, we are ready to work quickly whilst involving stakeholders to progress development of the next stage of work and plan ahead to enable delivery of infrastructure to better protect homes and businesses from flooding.</p> <p>Additional refinement of the defence designs and alignments will be required when developing the Outline Business Case for each measure, including engagement and consultation, and integration of regeneration and place making opportunities. This will lead to a refinement of scheme costs and benefits. We will work with funding specialists to develop a detailed funding strategy including identification of funding mechanisms, potential cash or in-kind contributions, and our approach to resolving any shortfall.</p>

## 2.2 Strategic Environmental Assessment Consultation

We chose to subject the plans to a Strategic Environmental Assessment (SEA) so that we could better understand any environmental impacts of the proposed strategy. We invited feedback and comments on the SEA as part of the consultation. Following detailed analysis, we have used information from the responses to make minor improvements to the SEA, which will support the implementation of the Strategy subject to Cabinet's Key Decision.

## 3 Environment Agency Assurance

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On 21<sup>st</sup> October 2020 the draft SOC was submitted to the Environment Agency's Large Project Review Group (LPRG) as part of the assurance of the case for Flood and Coastal Erosion Risk Management (FCERM) Grant in Aid and Local Levy funding for delivery of the Strategy. Following initial comments, BCC presented to LPRG on 12<sup>th</sup> November with a response to final comments issued 17<sup>th</sup> December 2020, with minor clarifications. LPRG recommended the SOC for approval on 13<sup>th</sup> January, and at the time of writing we await approval from the Environment Agency, Defra and HM Treasury. Further approvals and consents will be required for design and delivery of any Strategy measures.

## 4 Next Steps

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Proposals are at a very early stage. Consultation on the Strategy, and supporting SEA, is the first step in the long-term plan. The consultation raised awareness on the need for the Strategy and sought views on the leading strategic approach to inform our Cabinet consideration as to whether to adopt the Strategy.

If adopted, Outline Business Cases will be developed for elements of the Strategy. The first OBC is currently scheduled to be completed in 2022 - 23. This will be followed by a subsequent consultation, a key decision by our cabinet to progress the scheme, and the commencement of detailed design and delivery. The process is outlined in more detail within the SOC.

We are not finalising any plans for flood defences at any particular location and there will be many opportunities to have a say. The first phase would be delivered over several years, it is anticipated works could start from 2025 onwards. Engineering surveys, public engagement and design work would be needed before the details of the flood defences could be finalised.

At OBC stage, additional refinement of the defence designs and alignments will be required, including integration of regeneration and place making opportunities as well as feedback from engagement and consultation. Environmental scoping and consenting will be developed to ascertain the scale of potential impacts to habitats and areas of loss, and to inform the requirements for compensatory habitat and biodiversity net gain.

We will work collaboratively with many different organisations such as the Environment Agency to deliver the proposed flood defences in the coming years. This will include making funding applications to central government, as well as working with other partners, to secure the funds needed to deliver the long term flood defences that Bristol and neighbouring communities need.