



# Environmental Impact Assessment [version 1.0]

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| <b>Proposal title: Bristol Avon Flood Strategy Outline Business Case</b>   |   |
| <b>Project stage and type:</b> <input type="checkbox"/> Initial Idea Mandate   | <input checked="" type="checkbox"/> Outline Business Case <input type="checkbox"/> Full Business Case                         |
| <input type="checkbox"/> Policy <input type="checkbox"/> Strategy <input checked="" type="checkbox"/> Function <input type="checkbox"/> Service<br><input type="checkbox"/> Other [please state] | <input type="checkbox"/> New <input type="checkbox"/> Changing<br><input checked="" type="checkbox"/> Already exists / review |
| <b>Directorate: Economy of Place</b>   | <b>Lead Officer name: Matthew Sugden</b>  |
| <b>Service Area: City Transport</b>  | <b>Lead Officer role: Project manager</b>   |

## Step 1: What do we want to do?

The purpose of this Environmental Impact Assessment is to help you develop your proposal in a way that is compliant with the council's policies and supports the council's strategic objectives under the [One City Climate Strategy](#), the [One City Ecological Emergency Strategy](#) and the latest [Corporate Strategy](#).

This assessment should be started at the beginning of the project proposal process by someone with a good knowledge of the project, the service area that will deliver it, and sufficient influence over the proposal to make changes as needed.

It is good practice to take a team approach to completing the Environmental Impact Assessment. See further [guidance](#) on completing this document. Please email [environmental.performance@bristol.gov.uk](mailto:environmental.performance@bristol.gov.uk) early for advice and feedback.

### 1.1 What are the aims and objectives/purpose of this proposal?

Briefly explain the purpose of the proposal and why it is needed. Please use plain English, avoiding jargon and acronyms.

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.

### 1.2 Will the proposal have an environmental impact?

Could the proposal have either a positive or negative effects for the environment now or in the future? If 'No' explain why you are sure there will be no environmental impact, then skip steps 2-3 and request review by sending this form to [environmental.performance@bristol.gov.uk](mailto:environmental.performance@bristol.gov.uk)

If 'Yes' complete the rest of this assessment.

|   |                             |                 |
|---|-----------------------------|-----------------|
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | [please select] |
|---|-----------------------------|-----------------|

### 1.3 If the proposal is part of an options appraisal, has the environmental impact of each option been assessed and included in the recommendation-making process?

If 'Yes' please ensure that the details of the environmental impacts of each option are made clear in the pros and cons section of the [project management options appraisal document](#).

|   |                             |   |                 |
|---|-----------------------------|---|-----------------|
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Not applicable | [please select] |
|---|-----------------------------|---|-----------------|

If 'No' explain why environmental impacts have not been considered as part of the options appraisal process.

Please see the Outline Business Case options appraisal

## Step 2: What kinds of environmental impacts might the project have?

Analysis of impacts must be rigorous. Please demonstrate your analysis of any impacts of the proposal in this section, referring to evidence you have gathered. See detailed [guidance documents](#) for advice on identifying potential impacts.

### Does the proposal create any benefits for the environment, or have any adverse impacts?

Outline any potential benefits of the proposal and how they can be maximised. Identify how the proposal will support our corporate environmental objectives and the wider [One City Climate and Ecological Emergency strategies](#).

Consider how the proposal creates environmental impacts in the following categories, both now and in the future.

**Reasonable efforts should be made to quantify stated benefit or adverse impacts wherever possible.**

Where the proposal is likely to have a beneficial impact, consider what actions would enhance those impacts. Where the proposal is likely to have a harmful impact, consider whether actions would mitigate these impacts.

Enhancements or mitigation actions are only required when there is a likely impact identified. Remember that where enhancements or mitigation actions are listed, they should be assigned to staff and appropriately resourced.

#### GENERAL COMMENTS (highlight any potential issues that might impact all or many categories)

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| GENERAL COMMENTS (highlight any potential issues that might impact all or many categories)   |  |   |
| <p><b>ENV1 Carbon neutral: Emissions of climate changing gases</b></p> <p>BCC has committed to achieving net zero emissions for its direct activities by 2025, and to support the city in achieving net zero by 2030.</p> <p>Will the proposal involve transport, or the use of energy in buildings? Will the proposal involve the purchase of goods or services? If the answer is yes to either of these questions, there will be a carbon impact.</p> <p>Consider the scale and timeframe of the impact,</p> | Benefits   | The scheme will significantly reduce the risk of flooding to property and infrastructure, and as such a benefit of the scheme is the reduction in carbon costs associated with clean-up operations. There is also potential for some carbon sequestration benefits but these have not yet been established. |
|  | Enhancing actions  |   |
|  | <p><b>Persistence of effects:</b>    <input type="checkbox"/> 1 year or less        <input type="checkbox"/> 1 – 5 years        <input checked="" type="checkbox"/> 5+ years</p> |   |
| Adverse impacts  | At SOC stage, a carbon study indicated that the total Whole Life Carbon (WLC) emissions amounts to approximately 1,540,000 tCO <sub>2</sub> e                                    |   |

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| <p>particularly if the proposal will lead to ongoing emissions beyond the 2025 and 2030 target dates.</p> <p><a href="#">Further guidance</a></p> <p><input type="checkbox"/> <b>No impact</b></p>  | <p><b>Mitigating actions</b></p> | <p>The OBC stage carbon study is pending, this report to be updated following receipt.</p> <p>The detailed design and full business case will determine the mitigating actions required to be delivered as part of the scheme.</p>  |
| <p><b>Persistence of effects:</b>    <input type="checkbox"/> 1 year or less                      <input type="checkbox"/> 1 – 5 years                      <input checked="" type="checkbox"/> 5+ years</p>  |                                  |   |
| <p><b>ENV2 Ecological recovery: Wildlife and habitats</b></p> <p>BCC has committed to 30% of its land being managed for nature and to halve its use of pesticides by 2030.</p> <p>Consider how your proposal can support increased space for nature, reduced use of pesticides, reduce pollution to waterways, and reduce consumption of products that undermine ecosystems around the world.</p> <p>If your proposal will directly lead to a reduction in habitat within Bristol, then consider how your proposed mitigation can lead to a biodiversity net gain. Be sure to refer to quantifiable changes wherever possible.</p> <p><a href="#">Further guidance</a></p> <p><input type="checkbox"/> <b>No impact</b></p> | <p><b>Benefits</b></p>           | <p>In some areas of the scheme there is the potential to create new areas for wildlife and habitat. This is most notable in areas of growth and regeneration where there is an ambition to create a multi-functional greenway including enhanced green space. Throughout the scheme, there is potential for incorporating smaller habitat improvements such as bird and bat boxes. There may be potential to improve fish passage.</p>  |
|   | <p><b>Enhancing actions</b></p>  |   |
|   | <p><b>Adverse impacts</b></p>    | <p>During the construction of new and amended defences, several wildlife corridors, habitats, and species could be affected, including intertidal / estuarine habitat. Other effects on estuarine ecology could result from disturbance of sediment as well as noise impacts. Effects are likely to be ‘temporary’ during construction of the scheme in the context of biodiversity, fauna and flora.</p>   |
|   | <p><b>Mitigating actions</b></p> | <p>‘Sensitive’ construction methods such as use of low noise piling techniques are recommended. Some estuarine habitats could be lost because of the scheme and the strategy would need to allow for replacement of these areas. As design evolves there will be a need to minimise any loss of intertidal mudflat and measures (including compensatory habitat) will be devised to ensure no net loss of biodiversity, taking account of any increased coastal defence footprint. Measures will be devised and presented as part of the detail to support a planning application that will commit to Biodiversity Net Gain</p> |
| <p><b>Persistence of effects:</b>    <input type="checkbox"/> 1 year or less                      <input type="checkbox"/> 1 – 5 years                      <input type="checkbox"/> 5+ years</p>   |                                  |   |
| <p><b>ENV3 A cleaner, low-waste city: Consumption of resources and generation of waste</b></p> <p>Consider what resources will be used as a result of the proposal, how they can be</p>   | <p><b>Benefits</b></p>           | <p>The scheme will significantly reduce the risk of flooding to property and infrastructure, and as such a benefit of the scheme is the reduction in resources used associated with clean-up operations.</p>  |
|   | <p><b>Enhancing actions</b></p>  |   |

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| <p>minimised or swapped for less impactful ones, where they will be sourced from, and what will happen to any waste generated</p> <p><a href="#">Further guidance</a></p> <p><input type="checkbox"/> No impact</p>   | <b>Persistence of effects:</b> <input type="checkbox"/> 1 year or less <input type="checkbox"/> 1 – 5 years <input type="checkbox"/> 5+ years            |   |
|   | <b>Adverse impacts</b>   | <p>Most resources that will be used because of the proposal arise from the construction phase related to construction materials and traffic. Resources required to operate defences over their lifetime have been minimised (see mitigating actions).</p>   |
|   | <b>Mitigating actions</b>  | <p>Construction impacts to be considered as part of the detailed design and construction management plan. “Passive” defences (those that do not require any operations for them to function as required) have been eliminated where possible by using ramps / ground raising in favour of gates which require active interventions.</p> |
| <b>Persistence of effects:</b> <input type="checkbox"/> 1 year or less <input type="checkbox"/> 1 – 5 years <input type="checkbox"/> 5+ years   |  |   |
| <p><b>ENV4 Climate resilience: Bristol’s resilience to the effects of climate change</b></p> <p>Bristol’s climate is already changing, and increasingly frequent instances of extreme weather will become more likely over time.</p> <p>Consider how the proposal will perform during periods of extreme weather (particularly heat and flooding).</p> <p>Consider if the proposal will reduce or increase risk to people and assets during extreme weather events.</p> <p><a href="#">Further guidance</a></p> <p><input type="checkbox"/> No impact</p> | <b>Benefits</b>  | <p>The proposal seeks to significantly improve central Bristol’s resilience to flooding because of climate change. Over the lifetime of the scheme, around 4,500 existing properties will be better protected from the risk of flooding.</p>  |
|   | <b>Enhancing actions</b>   |   |
|   | <b>Persistence of effects:</b> <input type="checkbox"/> 1 year or less <input type="checkbox"/> 1 – 5 years <input type="checkbox"/> 5+ years            |   |
|   | <b>Adverse impacts</b>   | N/A   |
|   | <b>Mitigating actions</b>  | N/A   |
| <b>Persistence of effects:</b> <input type="checkbox"/> 1 year or less <input type="checkbox"/> 1 – 5 years <input type="checkbox"/> 5+ years   |  |   |
| <p><b>Statutory duty: Prevention of Pollution to air, water, or land</b></p> <p>Consider how the proposal will change the likelihood of pollution occurring to air,</p>   | <b>Benefits</b>  | <p>The scheme will provide increased flood and erosion protection and significantly reduce the chance of contaminated land exposure through erosion and contaminated run-off entering the River Avon.</p>   |
|   | <b>Enhancing actions</b>   |   |
|   | <b>Persistence of effects:</b> <input type="checkbox"/> 1 year or less <input type="checkbox"/> 1 – 5 years <input checked="" type="checkbox"/> 5+ years |   |

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| water, or land and what steps will be taken to prevent pollution occurring.<br><br><a href="#">Further guidance</a><br><input type="checkbox"/> No impact | <b>Adverse impacts</b>   | The preferred option will require activities such as piling that could affect water and soil through disturbance to the riverbed and the release of sediment into the River Avon, particularly at locations such as Cumberland Basin, Cumberland Road, Commercial Road, Clarence Road, Cattle Market Road, Bathurst Dam, Netham and St Anne's. |
|   | <b>Mitigating actions</b>  | The temporary nature of these effects and could be reduced with good practice construction techniques  |
|   | <b>Persistence of effects:</b> <input type="checkbox"/> 1 year or less <input checked="" type="checkbox"/> 1 – 5 years <input type="checkbox"/> 5+ years |  |

### Step 3: Action Plan

Use this section summarise and assign responsibility for any actions you have identified to improve data, enhance beneficial, or mitigate negative impacts. Actions identified in section two can be grouped together if named responsibility is under the same person.

This action plan should be updated at each stage of the project. Please be aware that the Sustainable City and Climate Change Service may use this action plan as an audit checklist during the project's implementation or operation.

| Enhancing / mitigating action required   | Responsible Officer | Timescale |
|--|---------------------|-----------|
| A statutory EIA is required as part of consenting the scheme. Incorporating the findings into design considerations for maximising benefits and mitigation is required | M Sugden            | 4 years+  |
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### Step 4: Review

The Sustainable City and Climate Change Service need at least five working days to comment and feedback on your impact assessment. Assessments should only be marked as reviewed when they provide sufficient information for decision-makers on the environmental impact of the proposal.

Please seek feedback and review by emailing [environmental.performance@bristol.gov.uk](mailto:environmental.performance@bristol.gov.uk) before final submission of your decision pathway documentation<sup>1</sup>.

Where impacts identified in this assessment are deemed significant, they will be summarised here by the Sustainable City and Climate Change Service and must be included in the 'evidence base' section of the decision pathway cover sheet.

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| <b>Summary of significant beneficial impacts and opportunities to support the Climate, Ecological and Corporate Strategies (ENV1,2,3,4):</b>  |
| BCC's Environmental Impact Assessment has determined significant beneficial impacts from the proposal: The proposal will make a significant contribution to increasing Bristol's climate resilience by better protecting around 4,500 homes. It will also likely make long term improvements to the city's ecology. |

<sup>1</sup> Review by the Sustainable City and Climate Change Service confirms there is sufficient analysis for decision makers to consider the likely environmental impacts at this stage. This is not an endorsement or approval of the proposal.

**Summary of significant adverse impacts and how they can be mitigated:**

BCC's Environmental Impact Assessment has determined significant adverse impacts from the proposal: The proposal's whole life carbon emissions are estimated to be 55,000 tCO<sub>2</sub>e. This may be partially offset during the project's lifetime through carbon emissions associated with avoided flood damage.

**Environmental Performance Team Reviewer:**

Daniel Shelton

**Submitting author:**

Matthew Sugden

**Date:**

14/12/2023

**Date:**

14/12/2023